

FORMER COMPUTER CIRCUITS SITE
145 MARCUS BOULEVARD, HAUPPAUGE, NEW YORK
CERCLA-02-2000-2036

2017 ANNUAL SITE MANAGEMENT REPORT

SUBMITTED TO:



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(CERCLA-02-2000-2036)
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1.0 SITE MANAGEMENT CERTIFICATION

P.W. Grosser Consulting, Inc. (PWGC) certifies for the calendar year 2017, qualified environmental professionals within the firm had primary direct responsibility for implementation of the remedial program for the Former Computer Circuits Superfund Site (CERCLA-02-2000-2036).

PWGC certifies that the Interim Remedial Measure (IRM) dated July 2005 and Remedial Action Work Plan (RAWP) dated May 2009, approved by USEPA on December 21, 2009, were implemented and that requirements in those documents and addenda have been substantively complied with.

PWGC certifies that significant remedial activities, including operation of Soil Vapor Extraction (SVE) Systems, were overseen by qualified environmental professionals, and that environmental samples, including indoor air, SVE system influent, and groundwater, collected from the site were collected by qualified environmental professionals in accordance with the procedures detailed in the IRM and/or RAWP.

PWGC certifies that for the calendar year 2017:

- Existing on-Site Engineering Controls (ECs) are in-place and effective, and proposed Institutional Controls (ICs) have been provided to USEPA for review.
- Existing remediation systems at the site are performing as designed.
- The ability of existing ECs and ICs to protect the public health and environment has not been significantly impacted.
- The operation and maintenance plan for existing ECs was implemented as detailed.
- Access is available to the Site by EPA to evaluate continued maintenance of existing ECs and ICs.



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2.0 INTRODUCTION

P.W. Grosser Consulting, Inc. (PWGC) has been contracted by 145 Marcus Boulevard, Inc. to prepare an Annual Site Management Report for the former Computer Circuits Site, located at 145 Marcus Blvd, Hauppauge, New York. The site was placed on the National Priorities List (NPL) effective May 10, 1999 and assigned United States Environmental Protection Agency (EPA) Index No. CERCLA-02-2000-2036. This Annual Site Management Report has been prepared in accordance with Section 12.2 of the approved Remedial Action Work Plan (RAWP) (PWGC, May 2009). The RAWP was prepared as required by the Administrative Order for Remedial Action for Computer Circuits Superfund Site (CERCLA-02-2009-2015) (USEPA, April 1, 2009) and the Record of Decision (ROD) for Computer Circuits Superfund Site (EPA, September 2008) to specify the ongoing and future activities necessary to implement the remedy selected for the site. The RAWP was approved by EPA on December 21, 2009.

2.1 Site Description

The former Computer Circuits site is a 2.5-acre property located within an industrial park in Hauppauge, New York (**Figure 1**). It is bordered by Marcus Boulevard to the west and other industrial/commercial businesses to the north, south, and east. The site is occupied by a 21,600 square foot, one-story building, which is located near the center of the site (**Figure 2**). Asphalt driveways and parking areas are present to the north, south, and east of the building, and extend the length of the property. The paved areas and building area occupy approximately 50 percent of the total area of the site. The remainder of the site consists of a landscaped area (75 x 240 feet) at the front (west side) of the building, and a vacant, unpaved area approximately 60 x 150 feet to the rear (east) of the building. A thin wooded strip is present (approximately 10 to 15 feet wide) at the rear of the vacant area along the east property line. The approximate building interior layout is illustrated in **Figure 3**.

There are no underground or aboveground storage tanks at the site. The heating system is fueled by natural gas which is piped to the site via underground connections along the north side of the building. Sanitary wastes are discharged to an on-site septic system located at the front (west side) of the building. There are multiple storm drains (catch basins) present on the site located throughout the east parking lot.

2.1.1 Site Topography

The topographic relief at the site is generally flat with a gentle slope to the west toward Marcus Boulevard. At the very rear of the site, along the east property line the land surface drops steeply approximately eight feet to the neighboring property.

2.1.2 Regional Geology/Hydrology

The former Computer Circuits site is underlain by glacial deposits, specifically the Ronkonkoma Terminal Moraine, which consists of heterogeneous sand, gravel, and boulders with occasional silt and clay lenses. Glacial deposits are approximately 150 feet in thickness and underlain by more than 1000 feet of Cretaceous coastal plain sediments. The Smithtown Clay is seen one to two miles to the west of the site at a depth within the glacial sediments of up to 100 feet (Lubke, 1964).

The uppermost of the Cretaceous formations is the Magothy, which consists of more than 600 feet of highly stratified layers of sand, gravel, silt and clay that dip gently to the southeast. The Magothy Formation is underlain by the Raritan Clay Member and the Lloyd Sand Member, respectively. These formations are underlain by an erosional bedrock surface composed of granite, diorite, gneiss and schist (Lubke, 1964).

The saturated highly permeable glacial sediments and the underlying Magothy Formation are regarded as the upper aquifer (Lubke, 1964). Long Island is made up of a series of sand and gravel aquifers. All of Long Island's water supply comes from underground water held in aquifers. Three major aquifers make up the Long Island aquifer system. In sequence from shallowest to deepest, the major Long Island aquifers are: the Upper Glacial, the Magothy and the Lloyd Aquifers. The Ronkonkoma Moraine area is a recharge area in which groundwater flow has a downward component, which likely transports groundwater from the glacial deposits to the Magothy formation. The site is situated some distance north of a regional groundwater divide with groundwater flowing to the northeast, east and southeast. Located north of the divide, groundwater in the vicinity of the site generally flows in an east-northeast direction toward the headwaters of the Nissequogue River. The glacial water-table elevation may be slightly higher than the potentiometric surface of the Magothy beneath the site (see Figure 12 RI Report December 2006 - Regional Magothy Potentiometric Surface, March 1983); however, the water table elevation declines more rapidly to the north and east, so that the vertical component becomes upward. Estimated hydraulic conductivity for the glacial sediments in this area is 200 ft/day (McClymonds and Franke, 1972).

2.1.3 Site Geology/Hydrology

The former Computer Circuits site overlies an interconnected aquifer system consisting of the upper glacial deposits and the underlying Magothy Formation. Depth to groundwater in the underlying glacial aquifer is approximately 100 feet below land surface (bls). The saturated thickness of the Upper Glacial Aquifer at the site is approximately 95-110 feet based on an estimated depth of 200 feet to the surface of

the Magothy Aquifer. The lithologic description of the upper sediments from soil borings advanced during previous investigations at the site identifies the materials as fine sand with small amounts of gravel to a depth of 60 to 70 feet bls. The sand becomes coarser with depth, grading into a medium sand from 70 to 100 feet bls followed by a medium to coarse sand from the water table to a depth of approximately 130 feet bls. From 130 feet to 200 feet bls the material then returns to a fine to medium sand.

According to previous investigations performed at the site, including the Remedial Investigation/Feasibility Study (RI/FS) documented by The Remedial Investigation Report for the Former Computer Circuits Site (PWGC, December 2006) and The Feasibility Study for the Former Computer Circuits Site (PWGC, June 2007), groundwater flow is generally northeast to east at an average gradient of 0.001 ft/ft, with some localized variations. The horizontal hydraulic conductivity across the site, as determined from rising head tests performed in the site monitoring wells, ranged from 51 to 177 ft/day with a mean value of 130 ft/day. Using the average water table gradient of 0.001 and a porosity of 25 percent, the groundwater seepage velocity of the site ranges from 0.23 to 0.78 feet per day with a mean of 0.57 feet per day.

There are no surface water bodies near the site. Artificial recharge basins are located throughout the industrial park to accept storm water run-off from roadside catch basins. Since the depth to groundwater in the area is approximately 100 feet below surface, the water table surface does not intersect the bottom of these structures.

2.2 Site History

From 1969 to 1991, the property was owned by MCS Realty and leased to various companies. Computer Circuits was the first tenant and occupied the entire property from 1969 to 1977. From 1977 to 1980 the site was leased to a trade school. NAV-TEC, an assembler of electronic components, occupied the site from 1980 to 1983, followed by a tax form preparation company (TYMSHARE) from 1983 to 1989. In July of 1991, MCS Realty sold the property to 145 Marcus Boulevard Corporation. The site was most recently occupied by Algorex Power and Control Electronics, Incorporated (APACE), an electronics manufacturing and design company specializing in power and motion control products. APACE vacated the property in April, 2002 and the property remained vacant until the Fall of 2005, at which time the southwest corner of the building was occupied by Castle Financial Advisors. Current site usage is detailed in Section 2.4.

Computer Circuits was a manufacturer of printed circuit boards for both military and commercial applications. Waste liquids from the circuit board manufacturing process (containing copper sulfate, nickel, sulfuric acid, hydrochloric acid, lead fluoroborate, fluorides, copper, gold cyanate, ammonia, lead, nitric acid, and tin) were discharged to five industrial leaching pools located southeast of the building. Photographic chemicals and trichloroethylene, associated with a dark room and the silk screening room located in the northern part of the facility, were discharged to a single industrial leaching pool on the north side of the building. In January of 1973, a pipe connection was discovered between the Computer Circuits industrial leaching pools on the south side of the building and a catch basin on Marcus Boulevard by the Suffolk County Department of Environmental Control (SCDEC). After the connection was removed in 1974, wastewater was observed flowing over the surface of the ground into the storm drain system. In 1975, Computer Circuits applied for and was issued a State Pollution Discharge Elimination (SPDES) Permit (No. 0075485) from the New York State Department of Environmental Conservation (NYSDEC). The permit, which was effective from April of 1975 to April of 1977, regulated the discharge of copper, iron, lead, nickel, silver and phenol to the industrial leach pool system.

On numerous occasions between 1976 and 1977, the SCDEC collected samples from the industrial leaching pools and found that copper and lead were consistently detected at levels above the SPDES permit limits. An inspection conducted in 1976 revealed that the site was littered with trash, broken barrels, and spilled piles of chemicals and blue/green colored sludge.

In 1976, in response to requests by the SCDEC, Computer Circuits hired a contractor who excavated and filled the five industrial leaching pools located near the southeast corner of the building and installed two new leaching pools in this general area, which were also intended for industrial waste disposal. In 1977, the SCDEC traced the building's plumbing to identify connections to two leaching pools located on the north side of the building. It was determined by the SCDEC that one of the pools was part of a sanitary system that was connected to an unused bathroom. The second pool was connected to sinks which were located in a silk screen fabrication room and a photographic dark room. The silk screening process utilized trichloroethylene (TCE) to remove ink from the screens prior to rinsing with water in the sink. The industrial leaching pool was reported to be completely "clogged" and was capped inside the building sometime between 1977 and 1978 (SCDEC). Computer Circuits vacated the premises in 1978.

2.3 Summary of Previous Investigations and Enforcement Actions

The following is a brief chronological summary of the sampling/analytical programs and remedial actions conducted at the former Computer Circuits site, as well the regulatory activities that enforced these actions. The locations of the monitoring wells referenced in this section are illustrated in **Figure 4**.

Suffolk County Department of Health Services, Water Pollution Control Unit (formerly SCDEC), 1976 and 1977

SCDEC sampled the five on-site industrial leaching pools and found exceedances for copper and lead. Additional actions during this period are discussed the preceding section.

NYSDEC, 1977

The NYSDEC obtained an injunction against Computer Circuits and all site operations ceased. Computer Circuits later vacated the site.

NYSDEC, December, 1986

The NYSDEC placed the site on the New York Registry of Inactive Hazardous Waste Disposal Sites under a Class 2 classification, meaning that the site posed a significant threat to the public health or the environment and that further action will be required.

Roux Associates, Inc., May 3, 1989

Roux Associates, under contract to the former property owner (MCS Realty), conducted a soil and groundwater investigation at the site, as required by the NYSDEC under an Order on Consent (Number W10061885) between the NYSDEC and the former property owner, MCS Realty. A magnetometer survey was conducted. Ten soil borings were drilled at various locations throughout the site, including west of the building, near the industrial leaching pools at the southeast and northwest corners of the building. Three monitoring wells, MW1, MW2 and MW3 were installed and sampled. Volatile organic compounds (VOCs) were not detected in the soil above NYSDEC guidance values. Groundwater analysis from the monitoring wells indicated VOCs, including trichloroethene (TCE), 1,2-dichloroethene (1,2-DCE) and 1,1,1-trichloroethane (1,1,1-TCA) present above NYSDEC standards and metals including cadmium, chromium, copper, lead, nickel and zinc present at concentrations below NYSDEC standards. No significant anomalies were detected during the magnetometer survey.

PWGC, May 1994

PWGC, as consultant for the new property owner (145 Marcus Boulevard Corporation), investigated a sinkhole at the site, located southeast of the corner of the building. Construction debris and a barrel containing a nickel solution were discovered in the sinkhole area. This material was excavated, stockpiled, and removed from the site in November 1995.

PWGC, September through November 1995

PWGC, as consultant for the property owner conducted a soil quality investigation. Five soil borings were drilled, one near the main sanitary cesspool system west of the building, one at the industrial leaching pool located on the north side of the building, and three around the former location of the industrial leaching pools south of the building. Groundwater samples were also collected from the three existing monitoring wells at this time. VOCs were not detected in the soil samples above NYSDEC standards. Metals including lead, silver, copper, nickel and zinc were detected in the soil samples above the NYSDEC standards. Groundwater samples indicated the presence of VOCs, including TCE, 1,2-DCE and 1,1,1-TCA and tetrachloroethene (PCE) above NYSDEC standards. Metals including zinc were detected slightly above the NYSDEC ambient water quality standards (AWQS). Additional stained soil was also removed from the sinkhole area and the remains of a leaching pool, believed to be one of the two industrial replacement pools, were discovered.

Parsons Engineering, February 1996

Parsons Engineering, under contract to NYSDEC, conducted a soil vapor survey at the site. The samples were analyzed, using a mobile laboratory, for TCE, 1,1,1-TCA, and 1,2-dichloroethane (1,2-DCA). Elevated levels (>10,000 ppb) of TCE were detected in soil vapor in the immediate vicinity of the industry pool on the north side of the building and adjacent to the discharge line which connects the pool where it exits the building. Elevated levels of TCE and 1,1,1-TCA were detected in a soil vapor probe located along the east side of the building, just north of the exterior door.

Malcolm Pirnie, Inc., March through May 1996

Under contract to the USEPA, Malcolm Pirnie conducted a Hazard Ranking System sampling investigation of the site. Fourteen subsurface soil samples were collected from the industrial leaching pool areas, the sinkhole area, and background locations on the property. Metals including copper and nickel were detected above NYSDEC guidance values in the soil samples. VOCs were not detected above NYSDEC

guidance values. In addition, three monitoring wells MW4, MW5 and MW6 were installed at the site. In May, groundwater samples were collected from the three new wells and two of the previously existing wells (MW2, MW3). VOCs including TCE, 1,1,1-TCA, PCE and 1,2-DCE were detected above NYSDEC standards in each of the wells. Analysis for metals detected zinc above NYSDEC standards in MW2.

USEPA, May 10, 1999

The EPA placed the former Computer Circuits site on CERCLA's National Priorities List (NPL) of sites. USEPA took over as the lead regulatory agency at the site and provided oversight for the implementation of an RI/FS.

PWGC, September 2000 through January 2003

On September 29, 2000, 145 Marcus Boulevard Corporation voluntarily entered into an administrative order on consent to conduct an RI/FS to determine the nature and extent of contamination at the site. PWGC performed the RI field work from December 17, 2001 through July 24, 2002. RI field activities included a geophysical survey of the site, excavation of test pits and collection and analysis of soil, groundwater and air samples. The draft Remedial Investigation Report was submitted to USEPA on January 3, 2003. It identified TCE at levels of concern in indoor air in the onsite building, in soils just beneath the slab of the northern portion of the building, and in soils within the leaching pool adjacent to the north side of the building.

PWGC, September 28, 2004 through December 15, 2005

Based on the presence of TCE in air samples collected from the building, an Order of Consent was signed on September 28, 2004 that provided for the performance of a removal action by 145 Marcus Boulevard Corporation. The Order called for the construction and operation of both a soil vapor extraction (SVE) system and sub-slab depressurization system at the site. PWGC completed construction of the system on December 15, 2005, which included a single vertical extraction well installed within the contaminated zone of the north industrial leaching pool, and a single horizontal extraction well installed beneath the concrete slab of the former silk screening room. Both extraction wells are remediating impacted soils through mass transfer from the sorbed to the vapor phase. The horizontal well installed beneath the building serves as an abatement function system to remove accumulated vapors beneath the slab and prevent them from migrating to the building's interior. The system has been in continuous operation since.

EPA, February 2008 through November 2008

The EPA performed a soil vapor intrusion sampling study of the onsite building in 2008. From February 26 to 28, 2008, 30 sub-slab gas wells were installed in the building. An additional sub-slab soil gas well was installed on March 18 and 19, 2008 and samples were collected from each of the 31 sub-slab gas wells. Additional sub-slab gas samples and indoor air samples were collected on May 12 and 13, 2008 and again on September 22 and 23, 2008. TCE was detected in indoor air samples at concentrations slightly exceeding the indoor air cleanup levels specified in the 2004 Order on Consent. PCE and trans-1,2-Dichloroethene were also detected in indoor air samples. TCE was detected at levels of concern in sub-slab samples. PCE, trans-1,2-Dichloroethene, 1,1,1-TCA and cis-1,2-Dichloroethene were also detected in sub-slab samples. The results of this study are documented by a November 21, 2008 letter report prepared by Lockheed Martin Technology Services, Environmental Services/REAC for the EPA.

In addition to the soil vapor investigation, EPA installed six additional monitoring wells (three well couplets, each with a shallow and deep well). Groundwater samples were collected from each of these new wells, along with the existing on and off site wells in May 2008. TCE was detected at elevated concentrations in up gradient monitoring well ERT MW-12S, onsite monitoring well MW-1, and off site, down gradient monitoring wells MW-8, MW-9, ERT MW-13S, and ERT MW-14S. TCE detections were primarily off site, and along the northern site boundary.

EPA, September 2008 through April 2009

The EPA conducted activities in response to the findings of the soil vapor intrusion sampling study, including the optimization of the existing SVE system on the north side of the onsite building and the installation of a second SVE system on the south side of the site. On September 30, 2008, the EPA issued a Record of Decision (ROD) documenting the selected remedy for the site. An Administrative Order on Consent (Index No. CERCLA 02-2009-2015) was signed by the EPA on March 31, 2009, the terms of which were later agreed upon by the 145 Marcus Boulevard Corporation. The Order addressed the selected remedy specified by the ROD.

PWGC, May 2009

In accordance with the AOC for Remedial Action and ROD, PWGC prepared a draft Remedial Action Work Plan (RAWP) for the site which included: an Operation and Maintenance Manual for the SVE systems, a Site Management Plan, a Monitoring Plan (for performing monitoring of groundwater, indoor air, sub-slab vapor, and the SVE systems), a Quality Assurance Plan, a Health and Safety Plan, and reporting

requirements. The RAWP specified ongoing and future activities necessary to implement the remedy selected for the site. The draft RAWP was submitted to EPA for review on May 29, 2009.

EPA, December 2009

EPA approved the draft RAWP for the site without significant comments on December 21, 2009.

EPA, August 2011

EPA modified the approved RAWP to decrease the groundwater sampling frequency at the site from semi-annual to annual. A copy of the email confirming the modification is included in **Appendix A**.

EPA, June 2015

EPA modified the approved RAWP to reduce the number of indoor air samples required during each semi-annual indoor air sampling event, and eliminate annual groundwater sampling at the site. A copy of the email confirming the modification is included in **Appendix A**.

2.4 Current Site Use

The former Computer Circuits site is used for commercial and industrial purposes. The commercial/industrial zoning for the site is not expected to change in the near future. As of December 2017, the building is occupied as follows:

- The northwest portion of the building is occupied by Castle Financial Advisors, LLC, a financial services company employing approximately 12 persons.
- The southeastern portion of the building is occupied by Goldson, Nolan, Connolly, Nasis & Dornfeld LLP (GNC), a law firm employing approximately 12 to 15 persons.
- The northeastern portion of the building is occupied by Lambda, Inc., an electronics manufacturer employing approximately 20 persons. Lambda's space is used as executive offices and for product testing, no manufacturing is done on-site.
- The southwest portion of the building is occupied by the corporate offices of Lacrosse Unlimited, an athletic equipment and apparel retailer employing approximately 12 to 15 persons.

No significant changes to the building layout have occurred since 2009.

3.0 PRE-RECORD OF DECISION SUMMARY OF ENVIRONMENTAL CONDITIONS

The following summary of environmental conditions is based on the findings of previous environmental investigations performed at the former Computer Circuits site.

3.1 Source Areas

The contaminant source areas at the site consisted of industrial cesspools used for wastewater from operations at the Computer Circuits facility. Cesspools were located both beyond the southeast corner and on the north side of the site building. Previous investigations identified these areas as contributing to contamination in the underlying aquifer. The primary contaminants identified in source areas include 1,1-dichloroethene, 1,1,1-trichloroethane, 1,2-dichloroethane, acetone, chloromethane, methylene chloride, TCE, PCE and vinyl chloride. Recent groundwater data suggests that consistent contamination source areas are no longer present at the site.

3.2 Soil

Shallow borings collected between 2000 and 2003 revealed concentrations of TCE exceeding the NYSDEC Unrestricted Use Recommended Soil Cleanup Objective (RSCO) of 470 ug/kg in the vicinity of the industrial leaching pool on the north side of the building, as well as beneath the concrete slab floor in the former silk screening room. The highest reported TCE concentration in a shallow boring was 12,000 ug/kg, detected in 2001 from a soil sample collected in the top two feet below the concrete slab in the northern portion of the building. Samples collected in 2002 from deep soil borings also revealed concentrations of TCE exceeding the NYSDEC RSCO at the base of the former industrial leaching pool on the north side of the building and in the vicinity of the leaching pools off of the southeast corner of the building. A TCE concentration of 55,000 ug/kg was detected in a 2002 sample collected 22 feet bls, at the base of the former leaching pool on the north side of the building.

Previous investigations conducted in 1995 also identified concentrations of metals (primarily nickel and copper) at the base depth (8-22 ft) of the primary industrial leaching pools near the southeast corner of the building. The maximum detected concentration of copper was 12,300 mg/kg. The NYSDEC Unrestricted Use RSCO for copper is 50 mg/kg. Nickel was detected above the NYSDEC Unrestricted Use RSCO in only one subsurface soil sample. The deposit of metals was limited to the immediate area occupied by the former pools near the southeast corner of the building and was clearly related to the discharge of industrial wastes to the on-site drainage system.

The industrial leaching pool located on the north side of the building also contained concentrations of metals, primarily nickel and silver. Most of the detections were in the upper 5 to 7 feet of soil, however silver was detected at a concentration of 168 mg/kg in a soil sample collected 20 feet bls. The NYSDEC Unrestricted Use RSCO for silver is 2 mg/kg.

3.3 Groundwater

The primary contaminants identified in groundwater beneath the former Computer Circuits were TCE and PCE. During the 2002 RI, both of these contaminants were detected above their respective New York State Ambient Water Quality Standards (AWQS) and EPA Maximum Contaminant Levels (MCLs) at concentrations of 280 ppb and 270 ppb, respectively. Monitoring data collected in recent years indicated that PCE and TCE concentrations have continued to decrease significantly to concentrations below NYSDEC AWQS in wells located within site boundaries, as well as in wells located both up gradient and downgradient of the site. Data collected in 2013 indicate that TCE concentrations did not exceed the MCL value. The sole detection of PCE at a concentration exceeding its AWQS of 5 ppb was from the sample collected from monitoring well ERT MW-12S, which is located up gradient of the subject property with respect to groundwater flow. Additionally, PCE was reportedly never used at the site and only trace amounts of PCE were detected in site soils, providing further evidence that the presence of PCE is predominantly related to a source or sources up gradient to the site.

3.4 Indoor Air

Air samples collected inside the site building on July 24, 2002 yielded detections of 1,1-dichloroethene, 1,1,1-trichloroethane, 1,2-dichloroethane, acetone, chloromethane, methylene chloride, TCE, and vinyl chloride. As a result of these findings, a SVE system was installed to remediate contaminated soils in the contaminant-source area on the north side of the building and to mitigate vapor intrusion into the building. Only two VOCs were detected during a July, 2008 sampling event, namely, TCE and trans-1,2-dichloroethene. The highest detected concentrations of TCE and trans-1,2-dichloroethene were 6.07 ug/m³ and 0.381 ug/m³, respectively. Soil-gas samples collected around the perimeter of the building and beneath the building slab yielded maximum TCE and PCE concentrations of 80,613 ug/m³ and 8,815 ug/m³, respectively. As discussed in Section 1.3, additional corrective actions were taken after the May, 2008 sampling event, including the installation of a second SVE system on the south side of the site building.

4.0 SITE MANAGEMENT

4.1 Engineering Controls

There are currently two soil vapor extraction (SVE) systems (North SVE System and South SVE System) operating at the site. SVE is a remedial technology that reduces concentrations of VOCs adsorbed to soils in the unsaturated zone by evaporating the volatiles and drawing the resulting vapor towards extraction wells. The vapors are then removed through extraction wells by applying a vacuum, and vapors are then passed through granulated activated carbon (GAC) drums prior to being exhausted to the atmosphere. Significant milestones and outages for both SVE systems are documented in **Table 1**. Additional information regarding the North and South SVE systems is detailed in the Operation and Maintenance (O&M) Manual for the site (Appendix A of the RAWP).

4.1.1 SVE System Operation and Maintenance

Both the North and South SVE systems operated continuously throughout 2017. To reduce VOC concentrations in indoor air at the site, the North SVE System has been drawing solely from the horizontal extraction well installed beneath the northern portion of the building since September 2008, and the South SVE System has been drawing solely from the horizontal extraction wells beneath the southwestern portion of the building since June 2015.

Prior to approval of the RAWP (approved December 21st, 2009), EPA was responsible for operation and maintenance of the South SVE System. PWGC began operation and maintenance of the South SVE system upon approval of the RAWP.

PWGC conducts routine operation, monitoring and maintenance (OM&M) visits to assess the operation of the SVE systems on a monthly basis. OM&M visits consist of assessing the system's current condition, documenting gauge readings, taking system air stream readings with a handheld photo-ionization detector (PID) and, when scheduled collecting system air samples for laboratory analysis. System parameters such as flow rates and gauge readings are documented on SVE system monitoring forms, included as **Appendix B**. No significant maintenance or repairs were necessary for either SVE system during 2017.

4.1.2 System Performance Sampling

During 2017, PWGC collected system performance samples from the North SVE and South SVE systems in July and December. System performance samples were collected from the combined system influent lines.

Samples are collected using SUMMA vacuum canisters in accordance with EPA/REAC SOP# 1704 Summa Canister Sampling, EPA/REAC SOP# 2008 General Air Sampling Guidelines, and the approved RAWP.

Canisters were transported under proper chain of custody procedures to Alpha Analytical of Westborough, Massachusetts, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory (ELAP ID: 11148) for analysis by EPA method TO-15 for VOCs. System performance sampling analytical data for contaminants of concern are summarized in **Table 2**; copies of the laboratory analytical reports are included in **Appendix C**.

4.1.3 Mass Removal

Analytical data from SVE system influent air samples and SVE system air flow rates are used to calculate actual mass removal rates. Mass removal rates for the SVE systems are summarized in **Table 3**. Based on mass removal calculations, through December 2017, the North SVE system has removed approximately 15.75 pounds of total VOCs; the South SVE system has removed approximately 4.35 pounds of total VOCs.

4.2 Institutional Controls

Institutional controls are intended to protect human health from exposure to existing contamination while remediation is ongoing. Institutional controls may include environmental easements/restrictive covenants that limit the use of the site to commercial or industrial, restrict new construction at the site, and restrict the use of groundwater at the site.

A draft institutional control consisting of a Declaration of Covenants and Restrictions for the property was submitted to USEPA for review in February 2010. To date USEPA has not approved the draft Declaration of Covenants and Restrictions. A copy of the draft institutional control is included as **Appendix D**.

4.3 Indoor Air Sampling

In July and December 2017, PWCG collected indoor air samples at locations specified in the RAWP, as modified by EPA (see RAWP modification email included in **Appendix A**). Current and historic indoor air sample locations are illustrated in **Figure 3**. Indoor air samples were collected to assess potential work place exposure while the building is occupied, and to support a decision to terminate operation of the SVE system as described in the AOC.

Indoor air samples were collected using SUMMA vacuum canisters in accordance with the procedures outlined in EPA SOP# 1704 SUMMA Canister Sampling, NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006), and the approved RAWP. Samples were collected over an eight

hour period between the hours of 9 AM and 5 PM in an effort to gather samples representative of conditions encountered by the office workers. Since the building does not have a subsurface basement or multiple stories, air quality samples were collected from the main floor within the breathing zone (3 to 5 feet above the floor). The office ventilation system was left on during sampling events.

Canisters were transported under proper chain of custody procedures to Alpha Analytical of Westborough, Massachusetts, a NYSDOH ELAP certified laboratory (ELAP ID: 11148) for analysis by EPA method TO-15 for VOCs. Analysis of the air samples was in accordance with EPA 625R-96 “Compendium of Methods for the Determination of Organic Compounds in Ambient Air”, TO15. Analytical data are compared to the site specific target concentration for TCE in indoor air as specified in the ROD for the site.

4.3.1 July 2017 Sampling Event

TCE was detected at concentrations exceeding its site specific target concentration of $0.36\mu\text{g}/\text{m}^3$ in samples IA-3 and IA-8. TCE concentrations in indoor air ranged from non-detect (multiple samples) to $0.613\mu\text{g}/\text{m}^3$ (IA-3). The highest TCE concentrations detected within the building were in samples collected from within the southeastern portion of the building (IA-3 and IA-8). TCE concentrations detected during the July 2017 sampling event did not exceed the NYSDOH Air Guideline value of $2\mu\text{g}/\text{m}^3$ for TCE.

Analytical data for contaminants of concern are summarized in **Table 4**; copies of laboratory analytical reports are included in **Appendix C**.

4.3.2 December 2017 Sampling Event

TCE was detected at concentrations exceeding its site specific target concentration of $0.36\mu\text{g}/\text{m}^3$ in samples IA-3, IA-5, IA-8. TCE concentrations in indoor air ranged from $0.317\mu\text{g}/\text{m}^3$ (IA-4) to $0.795\mu\text{g}/\text{m}^3$ (IA-8). The highest TCE concentrations detected within the building were in samples collected from within the southeastern portion of the building (IA-3 and IA-8). TCE concentrations detected during the December 2017 sampling event did not exceed the NYSDOH Air Guideline value of $2\mu\text{g}/\text{m}^3$ for TCE.

Analytical data for contaminants of concern are summarized in **Table 5**; copies of laboratory analytical reports are included in **Appendix C**.

4.3.3 Indoor Air Data Trends

Historical indoor air data for TCE are summarized in **Table 6**. In general, TCE concentrations have decreased significantly since indoor air monitoring began in 2005.

Northern Office Suites

Sample locations IA-1, IA-2 and IA-4 are located within the northern office suites. TCE data for location IA-2 is available for sampling events beginning in February 2005 (IA-2 corresponds approximately to IRM sample location AS-2); TCE data for locations IA-1 and IA-4 is available for sampling events beginning in December 2009.

Historically, TCE concentrations at sample locations within the northern portion of the building have been measured as high as 33 $\mu\text{g}/\text{m}^3$ (IA-2, February 2005). Following startup of the North SVE system in December 2005, TCE concentrations within the northern office suites decreased significantly. Since startup of the North SVE system the highest TCE concentration detected in the northern office suites is 9.7 $\mu\text{g}/\text{m}^3$ (IA-2, March 2006). TCE concentrations have been below the EPA's site specific target concentration of 0.36 $\mu\text{g}/\text{m}^3$ in the northern office suites since the December 2010 sampling event. TCE was not detected in samples IA-2 and IA-4 during July 2017 sampling event. TCE was detected in both samples during the December 2017 but at concentrations below the site specific target of 0.36 $\mu\text{g}/\text{m}^3$.

Southern Office Suites

Sample location IA-5 is located within the southwestern office suite; sample locations IA-3, IA-6, IA-7 and IA-8 are located within the southeastern office suite. TCE data for locations IA-3 and IA-5 is available for sampling events beginning in February 2005 (IA-3 and IA-5 correspond approximately to IRM sample locations AS-3 and AS-1, respectively); TCE data for locations IA-6, IA-7 and IA-8 is available for sampling events beginning in December 2009.

TCE has been historically detected at concentrations as high as 17 $\mu\text{g}/\text{m}^3$ in the southwestern office suite (location IA-5, February 2005). TCE concentrations in this area decreased significantly upon startup of the North SVE system. TCE concentrations from immediately prior to the startup of the South SVE system are not available for this portion of the building (no sampling was performed in this suite from September 2006 through September 2009). With the exception of the July 2014, July 2015, and December 2017 sampling events, TCE concentrations in this area have been below the EPA's site specific target concentration of 0.36 $\mu\text{g}/\text{m}^3$ since implementation of regular periodic sampling in this area began in September 2009.

Historic TCE concentration in the southeastern office suite have been measured as high as 26.87 $\mu\text{g}/\text{m}^3$ (IA-3, September 2006). In general, TCE concentrations in this area decreased significantly upon startup

of the North SVE system, with the exception of the high concentration detected at location IA-3 in September 2006. TCE concentrations from immediately prior to the startup of the South SVE system are not available for this portion of the building (no sampling was performed in this suite from September 2006 through September 2009). Since startup of the South SVE system, TCE concentrations in the southeastern portion of the building have remained relatively constant, fluctuating between $0.805 \mu\text{g}/\text{m}^3$ and $2.16 \mu\text{g}/\text{m}^3$, until the December 2015 sampling event during which TCE concentrations were below $0.500 \mu\text{g}/\text{m}^3$ in this area. The decrease in concentrations observed during the December 2015 sampling event were likely related to the modification of the South SVE System to draw solely from the sub-slab extraction wells (see Section 4.1). Samples collected at locations IA-3 and IA-8 in 2017 remained within the range of TCE concentrations observed in the southeastern portion of the building over the past several years.

4.4 Groundwater Sampling

Historically, TCE impact in groundwater at the site has significantly decreased since monitoring began in 2002. TCE has not been detected at a concentration exceeding its NYSDEC AWQS of 5 ppb in groundwater at the site since the June 2010 sampling event. Based on the lack of groundwater impact identified at the site since 2010, EPA eliminated the requirement for routine groundwater sampling at the site in 2015 (see RAWP modification email included in **Appendix A**). The site's monitoring well network remains in place to allow for future groundwater sampling, if necessary. Historical groundwater sample data are included in **Table 7**; monitoring well locations are illustrated in **Figure 4**.

4.5 Data Validation

Independent data validation was performed by Laboratory Data Consultants (LDC) of Carlsbad, California. Data validation was performed on 100% of the sample data. To the extent possible, LDC's validation was performed in conformance with Tier III guidelines as defined by EPA Region I, "Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses", dated March 1996. The data were evaluated in accordance with EPA Region II's Standard Operating Procedures (SOPs) from the EPA Hazardous Waste Support Branch: SOP#HW31 "Validating Air Samples Volatile Organic Analysis of Ambient Air in Canister by Method TO-15." EPA's "National Functional Guidelines for Organic Data Review" (EPA 540/R-99/008, October 1999) were also considered during the evaluation, and professional judgment was applied as necessary and appropriate.

Based on the validation effort, results for the VOCs in indoor air and soil vapor samples were determined to be usable as reported with minor qualification due to sample matrix and laboratory quality control outliers.

The completeness level attained for the analysis of the field samples was greater than 99%. The overall quality of the data was acceptable and all results as qualified are considered usable.

A copy of the Data Usability Summary Report is included as **Appendix E**.

5.0 CONCLUSIONS & RECOMMENDATIONS

PWGC has prepared this Annual Site Management Report in accordance with Section 12.2 of the approved RAWP for the site. Based on the information presented above, PWGC offers the following conclusions:

- Engineering controls at the site consist of two SVE systems (North SVE system and South SVE system).
- Draft institutional controls have been submitted to USEPA for review and comment.
- Engineering Controls (i.e., North and South SVE systems) at the site have been operating as designed and effectively removing VOCs from the subsurface of the site.
- Existing engineering controls at the site continue to be effective. Neither the North SVE system nor the South SVE system experienced significant down time during the period covered by this report. As of December 31, 2017, both the North and South SVE systems appear to be functioning as designed.
- PWGC certifies (see Site Management Certification, Section 1.0) that existing engineering controls at the site are in place, and performing as designed. The ability of existing engineering controls to protect the public health and environment has not been significantly impacted, and the operation and maintenance plan for existing engineering controls was implemented as detailed.
- Periodic site inspections were performed in accordance with Section 8.3 of the approved RAWP. Periodic operation and maintenance inspections are detailed in Section 3.1.1; inspection forms are included as **Appendix B**.
- Performance of treatment systems at the site is summarized in Section 3.1.3. Based on calculated mass removal rates:
 - The North SVE system removed approximately 0.25 pounds of total VOCs from the subsurface of the site during 2017 and a total of approximately 15.75 pounds of total VOCs since system start up in 2005.
 - The South SVE system removed approximately 0.91 pounds of total VOCs from the subsurface of the site during 2017 and a total of approximately 4.35 pounds of total VOCs since PWGC took control of the system in December 2009.
- Data for indoor air samples collected during 2017 are summarized in **Table 4** and **Table 5**. Sample locations are illustrated in **Figure 2**. Indoor air samples were collected from within the building in July and December 2017. During each sampling event, five indoor air samples were collected from throughout the building as specified in the RAWP. During the July 2017 sampling event, TCE concentrations in indoor air ranged from non-detect (multiple samples) to 0.613 µg/m³ (IA-3). During the December 2017 sampling event, TCE concentrations in indoor air ranged from 0.317

$\mu\text{g}/\text{m}^3$ (IA-4) to $0.795 \mu\text{g}/\text{m}^3$ (IA-8). During both sampling events, the highest TCE concentrations were detected in samples collected from within the southern portion of the building. TCE concentrations exceeding the NYSDOH AGV of $5 \mu\text{g}/\text{m}^3$ for TCE were not detected in indoor air samples collected during the July and December 2017 sampling events.

- Historical indoor air concentrations for TCE are summarized in **Table 6**. In general, TCE concentrations have decreased significantly inside the building since monitoring began in February 2005. TCE concentrations in the northern office suites have been below the EPA's site specific target concentration of $0.36 \mu\text{g}/\text{m}^3$ since December 2010. TCE concentrations in the southern office suites have decreased over time, however, concentrations in this area continue to exceed the EPA's site specific target concentration of $0.36 \mu\text{g}/\text{m}^3$. TCE concentrations in this area have generally ranged from $0.805 \mu\text{g}/\text{m}^3$ and $2.16 \mu\text{g}/\text{m}^3$ over the past several sampling events. However, during the December 2015 sampling event, TCE concentrations had decreased to a maximum of $0.500 \mu\text{g}/\text{m}^3$ in this area. The decrease in concentrations observed during the December 2015 sampling event were likely related to the modification of the South SVE System to draw solely from the sub-slab extraction wells (see Section 4.1). Samples collected at locations IA-3 and IA-8 in 2017 remained within the range of TCE concentrations observed in the southeastern portion of the building over the past several years. Based on the lack of groundwater impact identified at the site since 2010, EPA eliminated the requirement for routine groundwater sampling at the site in 2015. The site's monitoring well network remains in place to allow for future groundwater sampling, if necessary. Historical groundwater sample data are included in **Table 7**; monitoring well locations are illustrated in **Figure 4**.
- Laboratory analytical reports are included as **Appendix C**.
- Independent data validation was performed by Laboratory Data Consultants (LDC) of Carlsbad, California. Data validation was performed on 100% of the sample data. To the extent possible, LDC's validation was performed in conformance with Tier III guidelines as defined by EPA Region I, "Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses", dated March 1996. The data were evaluated in accordance with EPA Region II's Standard Operating Procedures (SOPs) from the EPA Hazardous Waste Support Branch: SOP#HW-24 "SOP for the Validation of Organic Data Acquired Using SW-846 Method 8260" (Rev. 2, December 1996) and SOP#HW31 "Validating Air Samples Volatile Organic Analysis of Ambient Air in Canister by Method TO-15.

Based on the validation effort, results for the VOCs in indoor air and soil vapor samples were determined to be usable as reported with minor qualification due to sample matrix and laboratory quality control outliers. The completeness level attained for the analysis of the field samples was greater than 99%. The overall quality of the data was acceptable and all results as qualified are considered usable. A copy of the Data Usability Summary Report is included as **Appendix E**.

Based on the conclusions detailed above, PWGC recommends that implementation of the approved RAWP and approved modifications, be continued.

Continued implementation of the RAWP will include monthly SVE system O&M, monthly status reporting, semi-annual indoor air sampling (July and December), and preparation of an annual Site Management Report for 2018.

6.0 REFERENCES

Administrative Order on Consent for Removal Action, United States Environmental Protection Agency, Region 2, 2004, Index Number CERCLA-02-2004-2005

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Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air - Second Edition, United States Environmental Protection Agency, Office of Research and Development, January 1999

Final Remedial Investigation Report, Former Computer Circuits Superfund Site, P.W. Grosser Consulting, Inc., February 2007

Guidance for Evaluating Soil Vapor Intrusion in the State of New York, Final, New York State Department of Health, October 2006

Guidelines for the Control of Toxic Ambient Air Contaminants, New York State Department of Environmental Conservation, November 1997, New York State DAR-1

Interim Remedial Measure, Former Computer Circuits Superfund Site, P.W. Grosser Consulting, Inc., July 2005

Remedial Action Work Plan, Former Computer Circuits Superfund Site, P.W. Grosser Consulting, Inc., May 2009

Summa Canister Sampling, United States Environmental Protection Agency, Environmental Response Team, July 1995

TABLES

Table 1

SVE System Milestones
Former Computer Circuits Site

Date(s)	Milestone
12/12/2005	Startup of North SVE System
2/22/2007 to 4/9/2007	North SVE System down - blower replacement
5/14/2007 to 5/16/2007	North SVE System down - shed broken into
11/13/2007	North SVE System carbon replaced
2/28/2008 to 3/19/2008	North SVE System shut down during EPA investigation at EPA's request
9/1/2008	South SVE System installed by EPA
9/18/2008	North SVE System vertical extraction well closed - system drawing from horizontal well only (at EPA's request)
11/11/2009	North SVE System remote monitoring system installed
12/3/2009	PWGC takes over operation and maintenance of South SVE System from EPA
2/13/2012 to 4/11/2012	South SVE System down - blower replacement
7/24/2012 to 8/2/2012	South SVE System down - effluent piping repair
10/29/2012 to 11/16/2012	North and South SVE Systems shut down to prevent damage during Hurricane Sandy
6/18/2015	South SVE System vertical extraction wells closed - system drawing from horizontal wells only

Table 2

SVE System Performance Sampling Analytical Data Summary
Former Computer Circuits Site

LOCATION SAMPLING DATE LAB SAMPLE ID	CAS Number	NYSDOH AGV ¹	NORTH SVE 7/26/2017 L1726012-02	NORTH SVE 12/19/2017 L1746905-02	SOUTH SVE 8/2/2017 L1726929-01	SOUTH SVE 12/19/2017 L1746905-01
1,1-Dichloroethene	75-35-4	NS	0.793 U	0.793 U	0.793 U	0.793 U
cis-1,2-Dichloroethene	156-59-2	NS	7.1	0.845	0.793 U	0.793 U
Tetrachloroethene	127-18-4	30	7.53	42.6	3.87	1.36 U
trans-1,2-Dichloroethene	156-60-5	NS	1.39	0.793 U	0.793 U	0.793 U
Trichloroethene	79-01-6	5	95.1	48.3	15.9	4.05
Vinyl chloride	75-01-4	NS	0.511 U	0.511 U	0.511 U	0.511 U

Notes:

All concentrations are $\mu\text{g}/\text{m}^3$

1 - Air Guideline Value (AGV), NYSDOH Soil Vapor Intrusion Guidance (applies to indoor air only)

U - Compound not detected above the laboratory Method Detection Limit

Table 3

Mass Removal Calculations
Former Computer Circuits Site

North SVE System						
Sample Date	Number of Days This Period	Trichloroethene (ug/m3)	Total VOCs (ug/m3)	Average SVE Flow Rate (cfm)	Average VOC Removal Rate ¹ (lbs/day)	Total VOCs Removed (lbs)
12/20/2005	NA	690	1,006	110	NA	NA
3/21/2006	91	0	23	110	5.073E-03	0.46
6/20/2006	91	0	0	110	1.134E-04	0.01
1/5/2007	199	352	758	100	3.398E-03	0.68
4/20/2007	105	550	1,310	70	6.489E-03	0.68
6/26/2007	67	948	3,657	70	1.559E-02	1.04
10/9/2007	105	2,890	5,076	70	2.740E-02	2.88
12/20/2007	72	698	2,344	70	2.328E-02	1.68
2/25/2008	67	1,030	2,442	70	1.502E-02	1.01
6/30/2008	126	1,530	2,551	70	1.567E-02	1.97
9/26/2008	88	1,100	1,421	70	1.246E-02	1.10
12/18/2008	83	331	478	70	5.959E-03	0.49
3/11/2009	83	470	717	60	3.214E-03	0.27
6/23/2009	104	439	686	60	3.773E-03	0.39
9/9/2009	78	524	767	60	3.908E-03	0.30
12/29/2009	111	106	188	60	2.569E-03	0.29
6/30/2010	183	235	393	60	1.563E-03	0.29
12/22/2010	175	1	10	60	1.084E-03	0.19
7/28/2011	218	194	223	60	6.271E-04	0.14
12/6/2011	131	68	76	60	8.030E-04	0.11
7/24/2012	231	154	442	60	1.393E-03	0.32
12/19/2012	148	52	137	60	1.558E-03	0.23
7/29/2013	222	9	51	60	5.048E-04	0.11
12/26/2013	150	41	105	60	4.192E-04	0.06
7/29/2014	215	12	46	60	4.057E-04	0.09
12/18/2014	142	31	79	60	3.361E-04	0.05
7/29/2015	223	97	207	60	7.702E-04	0.17
12/15/2015	139	36	130	60	9.066E-04	0.13
7/27/2016	225	84	274	60	1.087E-03	0.24
12/20/2016	146	36	48	60	8.661E-04	0.13
7/26/2017	218	95	182	60	6.180E-04	0.13
12/19/2017	146	48	130	60	8.372E-04	0.12
Total Mass Removed Since 12/20/2005 (lbs.)						15.75

South SVE System						
Sample Date	Number of Days This Period	Trichloroethene (ug/m3)	Total VOCs (ug/m3)	Average SVE Flow Rate ² (cfm)	Average VOC Removal Rate ¹ (lbs/day)	Total VOCs Removed (lbs)
12/29/2009	NA	79	313	175	NA	NA
6/30/2010	183	0	29	175	2.680E-03	0.49
12/22/2010	175	4	51	175	6.304E-04	0.11
7/28/2011	218	97	137	175	1.479E-03	0.32
12/6/2011	131	0	0	175	1.076E-03	0.14
12/19/2012	379	4	41	175	3.190E-04	0.12
7/29/2013	222	0	385	175	3.343E-03	0.74
12/26/2013	150	5	46	175	3.388E-03	0.51
7/29/2014	215	0	28	175	5.821E-04	0.13
12/18/2014	142	3	30	175	4.500E-04	0.06
7/29/2015	223	1	95	175	9.742E-04	0.22
12/15/2015	139	5	117	175	1.660E-03	0.23
7/27/2016	225	8	46	175	1.275E-03	0.29
12/20/2016	146	0	28	175	5.767E-04	0.08
8/2/2017	225	16	285	175	2.454E-03	0.55
12/19/2017	139	4	44	175	2.579E-03	0.36
Total Mass Removed Since 12/29/2009 (lbs.)						4.35

1 - Removal rates calculations based on equation in EPA 542-R-02-009, Elements for Effective Operation of Pump and Treatment Systems:

$$M_{air} = Q_{air} \times C_{air} \times \frac{0.0283 \text{ m}^3}{\text{ft}^3} \times \frac{1440 \text{ min}}{\text{day}} \times \frac{2.2 \text{ lbs}}{10^9 \mu\text{g}}$$

M_{air} = mass loading, removal rate in air (lbs/day)
 Q_{air} = flow rate in air (cfm)
 C_{air} = contaminant concentration ($\mu\text{g}/\text{m}^3$)

2 - Flow rate is based on vacuum gauge reading and manufacturer's Blower Performance Curve for Ametek Rotron EN656 M5XL

Table 4

Indoor Air Sample Analytical Data Summary (July 2017)
Former Computer Circuits Site

LOCATION SAMPLING DATE LAB SAMPLE ID	CAS Number	NYSDOH AGV ¹	IA-2 7/26/2017 L1726012-04	IA-3 7/26/2017 L1726012-06	IA-4 7/26/2017 L1726012-03	IA-5 7/26/2017 L1726012-07	IA-8 7/26/2017 L1726012-05
1,1-Dichloroethene	75-35-4	NS	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U
cis-1,2-Dichloroethene	156-59-2	NS	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U
Tetrachloroethene	127-18-4	30	0.136 U	0.42	0.136 U	0.325	0.21
trans-1,2-Dichloroethene	156-60-5	NS	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U
Trichloroethene	79-01-6	0.36*	0.172	0.613	0.107 U	0.177	0.58
Vinyl chloride	75-01-4	NS	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U

Notes:

All concentrations are $\mu\text{g}/\text{m}^3$

1 - Air Guideline Value (AGV), NYSDOH Soil Vapor Intrusion Guidance (applies to indoor air only)

* Site specific target concentration for TCE in indoor air as specified in the Record of Decision for the site

U - Compound not detected above the laboratory Method Detection Limit

Highlighted concentrations exceed the site specific target concentration of $0.36 \mu\text{g}/\text{m}^3$

Table 5

Ambient Air Sample Analytical Data Summary (December 2017)
Former Computer Circuits Site

LOCATION SAMPLING DATE LAB SAMPLE ID	CAS Number	NYSDOH AGV ¹	IA-2 12/19/2017 L1746905-04	IA-3 12/19/2017 L1746905-06	IA-4 12/19/2017 L1746905-03	IA-5 12/19/2017 L1746905-07
1,1-Dichloroethene	75-35-4	NS	0.079 U	0.079 U	0.079 U	0.079 U
cis-1,2-Dichloroethene	156-59-2	NS	0.079 U	0.079 U	0.079 U	0.079 U
Tetrachloroethene	127-18-4	30	0.522	0.583	0.414	0.637
trans-1,2-Dichloroethene	156-60-5	NS	0.793 U	0.793 U	0.793 U	0.793 U
Trichloroethene	79-01-6	0.36*	0.349	0.763	0.317	0.414
Vinyl chloride	75-01-4	NS	0.051 U	0.051 U	0.051 U	0.051 U

Notes:

All concentrations are $\mu\text{g}/\text{m}^3$

1 - Air Guideline Value (AGV), NYSDOH Soil Vapor Intrusion Guidance (applies to indoor air only)

* Site specific target concentration for TCE in indoor air as specified in the Record of Decision for the site

U - Compound not detected above the laboratory Method Detection Limit

Highlighted concentrations exceed the site specific target concentration of $0.36 \mu\text{g}/\text{m}^3$

Table 6

Historic TCE concentrations in Ambient Air
Former Computer Circuits Site

LOCATION SAMPLING DATE	IA-1	IA-2 ¹	IA-3 ²	IA-4	IA-5 ³	IA-6	IA-7	IA-8	IA-9	IA-10
February 2005 * , a	NS	33	12	NS	6.4	NS	NS	NS	NS	NS
February 2005	NS	23	17	NS	17	NS	NS	NS	NS	NS
December 2005	NS	4.6	5.9	NS	3.5	NS	NS	NS	NS	NS
January 2006	NS	0.81	0.91	NS	5.9	NS	NS	NS	NS	NS
February 2006	NS	1.9	1.8	NS	1.5	NS	NS	NS	NS	NS
March 2006	NS	9.7	8.1	NS	10	NS	NS	NS	NS	NS
April 2006	NS	0.45	0.21 U	NS	0.97	NS	NS	NS	NS	NS
May 2006	NS	3.8	7	NS	5.1	NS	NS	NS	NS	NS
June 2006	NS	0.37 U	5.4	NS	0.75	NS	NS	NS	NS	NS
July 2006	NS	2.9	4.2	NS	2.4	NS	NS	NS	NS	NS
August 2006	NS	5.91	5.91	NS	1.07 U	NS	NS	NS	NS	NS
September 2006	NS	2.69	26.87	NS	2.69	NS	NS	NS	NS	NS
December 2006	NS	1.1 U	NS	NS	NS	NS	NS	NS	NS	NS
March 2007 b	NS	5.48	NS	NS	NS	NS	NS	NS	NS	NS
June 2007	NS	0.831	NS	NS	NS	NS	NS	NS	NS	NS
September 2007	NS	2.39	NS	NS	NS	NS	NS	NS	NS	NS
December 2007	NS	1.3	NS	NS	NS	NS	NS	NS	NS	NS
March 2008 †	NS	2.95	NS	NS	NS	NS	NS	NS	NS	NS
May 2008 **	0.269 U	0.269 U	6.02	0.399	0.661	NS	NS	NS	NS	NS
June 2008 ‡	NS	3.25	NS	NS	NS	NS	NS	NS	NS	NS
September 2008 c	NS	0.445	NS	NS	NS	NS	NS	NS	NS	NS
December 2008	NS	1.07	NS	NS	NS	NS	NS	NS	NS	NS
February 2009 **	0.358 U	0.454 J	1.66	0.865	0.817	1.76	1.61	1.69	1.78	0.962
March 2009	NS	0.107 U	NS	NS	NS	NS	NS	NS	NS	NS
June 2009	NS	0.368	NS	NS	NS	NS	NS	NS	NS	NS
September 2009	NS	1.45	NS	NS	NS	NS	NS	NS	NS	NS
December 2009	0.107 U	0.107 U	0.972	0.107 U	0.107 U	0.805	0.854	1.05	NS	NS
June 2010	0.231	0.209	1.97	0.489	0.338	1.89	1.71	2.09	NS	NS
December 2010	0.107 U	0.107 U	1.16	0.107 U	0.118	1.2	1.21	1.17	NS	NS
July 2011	0.338	0.355	1.13	0.279	0.107 U	1.1	1.01	0.924	1.27	0.107 U
December 2011	0.215	0.22	1.34	0.231	0.274	1.34	1.32	1.41	NS	NS
July 2012	0.118	0.14	1.12	0.107 U	0.107 U	0.897	0.946	1.03	0.14	NS
December 2012	0.107 U	0.107 U	0.919	0.107 U	0.107 U	0.957	0.871	1.1	NS	NS
July 2013	0.263	0.236	1.96	0.236	0.183	1.93	1.8	1.96	NS	NS
December 2013	0.199	0.161	1.41	0.183	0.317	1.08	1.03	1.67	NS	NS
July 2014	0.107 U	0.107 U	1.83	0.107 U	0.602	2.08	1.9	2.16	NS	NS
December 2014	0.107 U	0.107 U	0.865	0.107 U	0.107 U	0.892	0.849	0.897	NS	NS
July 2015	NS	0.285	0.844	0.269	0.376	NS	NS	0.769	NS	NS
December 2015	NS	0.118	0.5	0.107 U	0.236	NS	NS	0.489	NS	NS
July 2016	NS	0.107 U	1.19	0.107 U	0.290	NS	NS	1.13	NS	NS
December 2016	NS	0.107 U	0.618	0.107 U	0.253	NS	NS	0.597	NS	NS
July 2017	NS	0.172	0.613	0.107 U	0.177	NS	NS	0.58	NS	NS
December 2017	NS	0.349	0.763	0.317	0.414	NS	NS	0.795	NS	NS

Notes:

All concentrations are µg/m³

1 - Includes data from IRM sample location AS-2

2 - Includes data from IRM sample location AS-3

3 - Includes data from IRM Sample location AS-1

* Samples were collected with the buildings ventilation system off (2/18/2005)

Samples were collected with the buildings ventilation system on (2/22/2005)

† Sample was collected with the SVE system shut down per the EPA's Request

‡ Sample was collected immediately after the SVE system was restarted following a power outage

**Samples collected by EPA ERT

Highlighted values exceed site specific target concentration of 0.36 µg/m³

a - Southwest portion of the building occupied, remainder of building interior under construction

b - Southwest, southeast, and northeast portions of the building occupied. Northwest portion under construction

c - Interior construction complete, entire building occupied

Table 7

Historical TCE Concentrations in Groundwater
Former Computer Circuits Site

Sampling Date	MW - 1	MW - 2	MW - 3	MW - 4	MW - 5	MW - 6	MW - 7	MW - 8	MW - 9
April 2002	39	200	17	38	31	67	1 J	51	53
July 2002	46	280	14	23	100	96	10 U	42	56
December 2006	15	28	10 U	3 J	5 U	4 J	NS	NS	NS
June 2007	NS	NS	NS	NS	NS	NS	5 U	14	17
May 2008*	9.29	1.32 J	5 U	5 U	NS	5 U	5 U	5.06	11.3
June 2010	3.3	1.8	0.5 U	1.4	0.5 U	NS	0.5 U	NS	5.4
December 2010	0.5 U	0.83	0.5 U	NS	0.5 U	NS	0.5 U	NS	4.6
July 2011	1.2	0.66	0.5 U	0.5 U	0.5 U	NS	0.5 U	NS	4.1
July 2012	1	0.66	0.5 U	0.5 U	0.5 U	NS	0.5 U	NS	1.6
July 2013	0.31 J	0.35 J	0.5 U	0.5 U	0.5 U	NS	0.5 U	NS	0.59
July 2014	0.2 J	0.19 J	0.5 U	0.5 U	0.5 U	NS	0.5 U	NS	0.29 J

Sampling Date	MW - 10	MW - 11	MW-AR2	MW-12S	MW-12D	MW-13S	MW-13D	MW-14S	MW-14D
April 2002	37	5 J	10 U	NS	NS	NS	NS	NS	NS
July 2002	170	3 J	10 U	NS	NS	NS	NS	NS	NS
December 2006	NS	NS	NS	NS	NS	NS	NS	NS	NS
June 2007	8.3	5 U	NS	NS	NS	NS	NS	NS	NS
May 2008*	2.98 J	5 U	5 U	9.82	5 U	8.26	5 U	10.8	5 U
June 2010	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.9	0.5 U	6.4	0.5 U
December 2010	0.85	0.5 U	0.5 U	NS	NS	0.5 U	5.3	0.5 U	3.4
July 2011	0.54	0.5 U	0.5 U	0.5 U	0.5 U	2.7	0.5 U	2.9 U	0.5 U
July 2012	0.54	0.5 U	0.5 U	0.5 U	0.62	2.1	0.5 U	4.2	0.65
July 2013	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.4	0.5 U	4.4	0.5 U
July 2014	0.21 J	0.5 U	NS	0.5 U	NS	0.43 J	0.5 U	4.3	0.5

Notes:

All concentrations are µg/L (ppb)

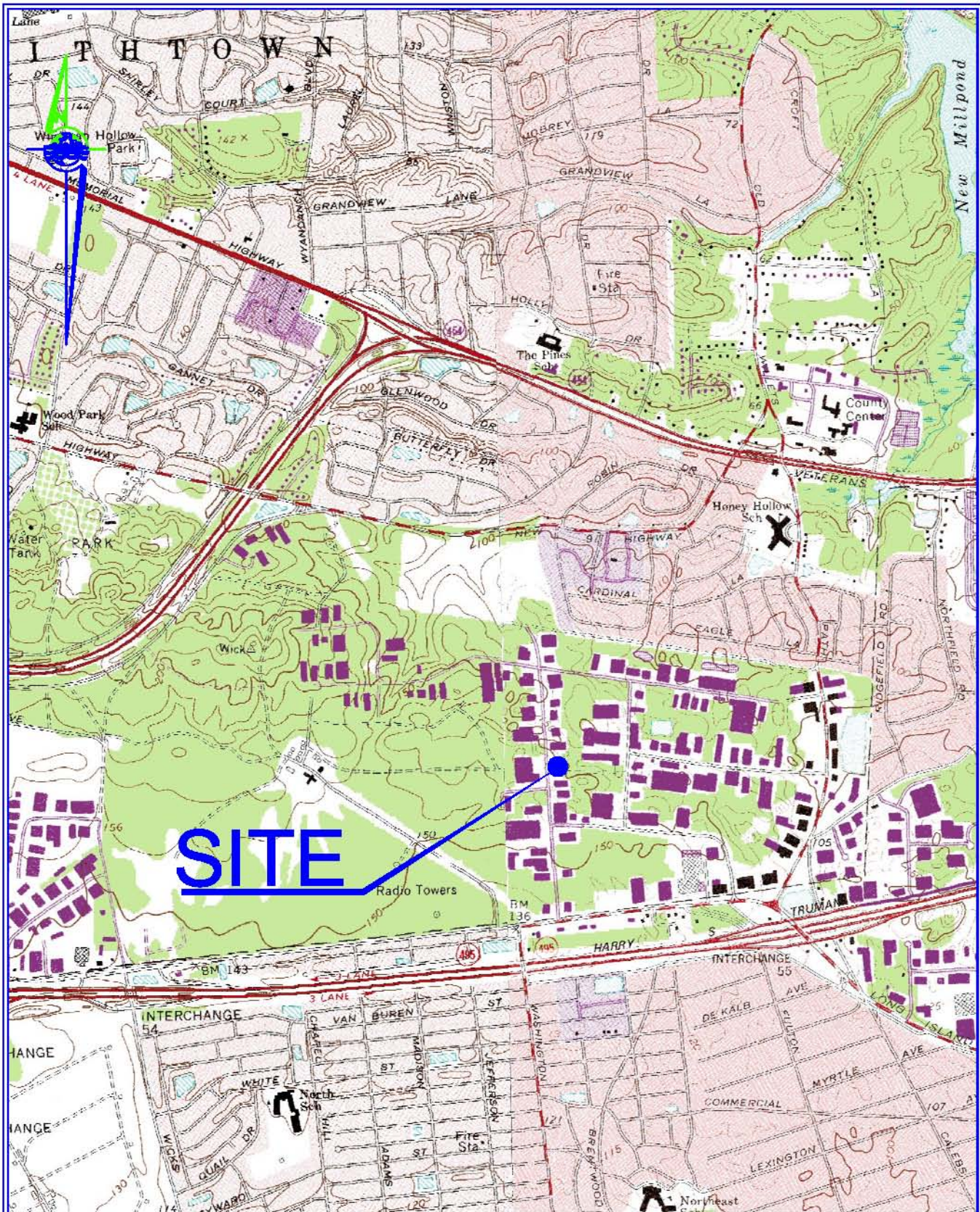
U - Compound not detected above the laboratory Method Detection Limit

J - Estimated value

*Samples collected by EPA ERT

Highlighted concentrations exceed AWQS

FIGURES



Mapped, edited, and published by the Geological Survey
 Revised in cooperation with New York
 Department of Transportation
 Control by USGS, USC&GS, and New Jersey Geodetic Survey

VICINITY MAP

SCALE: 1:2400



LEGEND

SDP-1

SVE SYSTEM
EXTRACTION POINT

NOTE:
INTERIOR BUILDING
CONFIGURATION IS
APPROXIMATE

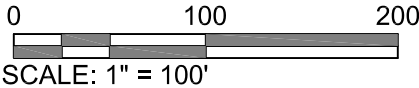


0 30 60
SCALE: 1" = 30'



J:\Projects M-RIMAR1101 - Compliance - Implementation 2011\Reports\Site Management Report\2011\Figure 4 Aerial Map.dwg (1x17H) Mar 01, 2013 2:35pm By: Ianza

BASEMAP PROVIDED BY:
U.S. EPA ENVIRONMENTAL
RESPONSE TEAM
AERIAL PROVIDED BY:
GOOGLE



WELL LOCATION MAP

SCALE: 1" = 100'

LEGEND	
ERT MW-13 S/D	2" GROUNDWATER MONITORING WELL COUPLETS: SHALLOW AND DEEP (ERT/ REAC)
MW-9	EXISTING GROUNDWATER MONITORING WELL

CONSULTANTS

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING
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DRAWINGS PREPARED FOR

REVISION	DATE	INITIALS	COMMENTS

DRAWING INFORMATION

PROJECT: MAR1101 APPROVED BY: PWG

DESIGNED BY: TM DATE: 1/10/12

DRAWN BY: LLG SCALE: AS SHOWN

SHEET TITLE

MONITORING WELL
LOCATIONS

COMPUTER CIRCUITS
SUPERFUND SITE
HAUPPAUGE, NY

FIGURE NO
4

SHEET
OF

APPENDIX A

CORRESPONDENCE

From: [Dannenberg, Mark](#)
To: [Thomas Melia](#)
Cc: [Kris Almskog](#); [DiGuardia, Lou](#); [Badalamenti, Salvatore](#)
Subject: RE: Former Computer Circuits Site
Date: Thursday, June 04, 2015 12:08:30 PM
Attachments: [image001.gif](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

Hi Tom.

Based on recent groundwater and indoor air data collected at the Computer Circuits site, we conclude that modifying the approved RAWP (as you request) is acceptable.

Specifically, the modifications are as follows:

- 1) Eliminate future groundwater sampling events. The monitoring wells should not be abandoned, as there may be the need to resume groundwater sampling in the future;
- 2) A reduction in the number of indoor air samples collected during each semi-annual sampling event. The amount of indoor air samples shall be reduced from 8 locations to 5 locations. Specifically, sample locations IA-2, IA-3, IA-4, IA-5, and IA-8 shall continue to be used for the collection of samples; and
- 3) The SVE system on the south/southwestern portion of the building shall be modified to only draw from the horizontal extraction points beneath the building in order to allow for a more rapid reduction of VOCs beneath the southwestern portion of the building. When TCE concentrations within the southwestern portion of the building have been reduced below the target concentrations, the vertical extraction well would be re-opened.

Also, as we discussed by phone, at some time in the near future, we should consider shutting-off the SVE systems for a few weeks and then sampling indoor air and soil gas beneath the building to determine whether there is a rebound in TCE levels.

You indicated that you are scheduling the next round of indoor air monitoring in July 2015. Please let us know your schedule when you firm-up your plans.

Mark Dannenberg
U.S. EPA, Region 2
290 Broadway
20th Floor
New York, NY 10007

From: Thomas Melia [mailto:thomasm@pwgrosser.com]

Sent: Friday, February 27, 2015 11:41 AM
To: Dannenberg, Mark
Cc: Kris Almskog
Subject: Former Computer Circuits Site

Mark –

Attached is a copy of the Annual Site Management Report for the Former Computer Circuits site. As detailed in the report, we are making the following requests for modifications to the approved RAWP:

- 1) Due to the continued minimal VOC concentrations in groundwater, eliminate future groundwater sampling events.
- 2) Due to the continued low level concentrations of TCE in indoor air, reduce the number of indoor air samples collected during each semi-annual sampling event.
- 3) Modify the south SVE system to only draw from the horizontal extraction points beneath the building to enhance the removal of VOCs from beneath the southwestern portion of the building.

Please let me know if you have any questions or comments on the Report or our requested modifications of the RAWP.

Thomas Melia | Project Manager



630 Johnson Ave, Suite 7
Bohemia, NY 11716

w. 631.589.6353

c. 516.315.6002

f. 631.589.8705



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Please consider the environment - think before you print!

Thomas Melia

From: Dannenberg.Mark@epamail.epa.gov
Sent: Wednesday, November 16, 2011 4:43 PM
To: Thomas Melia
Cc: Kris Almskog
Subject: Re: Former Computer Clrcuits Site

Hi Tom. Yes, per our discussion, we have determined that future sampling will be performed on an annual basis. As such, the second round of groundwater sampling for this year (2011) is not necessary.

Please give me a few days notice (preferably a week or more) before you perform the indoor air monitoring.
Mark

From: Thomas Melia <thomasm@pwgrosner.com>
To: Mark Dannenberg/R2/USEPA/US@EPA
Cc: Kris Almskog <krisa@pwgrosner.com>
Date: 11/16/2011 03:26 PM
Subject: Former Computer Clrcuits Site

Mark – I'm in the process of setting up indoor air sampling for next month. I'd just like to confirm that, per our discussion on August 10, the second round of groundwater sampling will not be necessary, and in future years, EPA will only require one annual groundwater sampling event. Thanks.

Thomas Melia
Project Manager



P.W. Grosser Consulting
630 Johnson Avenue, Suite 7
Bohemia, NY 11716
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 Please consider the environment - think before you print!

[attachment "image001.gif" deleted by Mark Dannenberg/R2/USEPA/US] [attachment "image002.png" deleted by Mark Dannenberg/R2/USEPA/US]

APPENDIX B

SVE SYSTEM MONITORING FORMS

APPENDIX C

LABORATORY ANALYTICAL REPORTS



ANALYTICAL REPORT

Lab Number:	L1726012
Client:	P. W. Grosser 630 Johnson Avenue Suite 7 Bohemia, NY 11716
ATTN:	Thomas Melia
Phone:	(631) 589-6353
Project Name:	MAR1601
Project Number:	MAR1601
Report Date:	08/02/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), NJ NELAP (MA015), CT (PH-0141), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-13-00067), USFWS (Permit #LE2069641).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: MAR1601
Project Number: MAR1601

Lab Number: L1726012
Report Date: 08/02/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1726012-01	SVE-SOUTH (INF)	SOIL_VAPOR	145 MARCUS BLVD	07/26/17 10:05	07/27/17
L1726012-02	SVE-NORTH (INF)	SOIL_VAPOR	145 MARCUS BLVD	07/26/17 09:30	07/27/17
L1726012-03	IA-4	AIR	145 MARCUS BLVD	07/26/17 16:05	07/27/17
L1726012-04	IA-2	AIR	145 MARCUS BLVD	07/26/17 16:10	07/27/17
L1726012-05	IA-8	AIR	145 MARCUS BLVD	07/26/17 16:25	07/27/17
L1726012-06	IA-3	AIR	145 MARCUS BLVD	07/26/17 16:20	07/27/17
L1726012-07	IA-5	AIR	145 MARCUS BLVD	07/26/17 16:15	07/27/17

Project Name: MAR1601
Project Number: MAR1601

Lab Number: L1726012
Report Date: 08/02/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: MAR1601
Project Number: MAR1601

Lab Number: L1726012
Report Date: 08/02/17

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on July 24, 2017. The canister certification results are provided as an addendum.

L1726012-04 results for Acetone should be considered estimated due to co-elution with a non-target peak.

Sample Receipt

The sample designated SVE-SOUTH (INF) (L1726012-01) was received at a final pressure of -28.7 inHg.

The client was contacted and the analysis was cancelled.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Christopher J. Anderson

Title: Technical Director/Representative

Date: 08/02/17

AIR

Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-02
Client ID: SVE-NORTH (INF)
Sample Location: 145 MARCUS BLVD
Matrix: Soil_Vapor
Analytical Method: 48,TO-15
Analytical Date: 07/30/17 02:37
Analyst: MB

Date Collected: 07/26/17 09:30
Date Received: 07/27/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.335	0.200	--	1.66	0.989	--		1
Chloromethane	0.296	0.200	--	0.611	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	6.65	5.00	--	12.5	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	5.07	1.00	--	12.0	2.38	--		1
Trichlorofluoromethane	0.332	0.200	--	1.87	1.12	--		1
Isopropanol	10.1	0.500	--	24.8	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	1.22	0.500	--	3.70	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	0.557	0.200	--	4.27	1.53	--		1
trans-1,2-Dichloroethene	0.351	0.200	--	1.39	0.793	--		1
1,1-Dichloroethane	0.534	0.200	--	2.16	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	1.79	0.200	--	7.10	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-02
 Client ID: SVE-NORTH (INF)
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 09:30
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chloroform	0.228	0.200	--	1.11	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	0.884	0.200	--	4.82	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	0.315	0.200	--	1.14	0.721	--		1
Trichloroethene	17.7	0.200	--	95.1	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	1.11	0.200	--	7.53	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-02
 Client ID: SVE-NORTH (INF)
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 09:30
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	106		60-140
Bromochloromethane	96		60-140
chlorobenzene-d5	86		60-140



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-03
Client ID: IA-4
Sample Location: 145 MARCUS BLVD
Matrix: Air
Analytical Method: 48,TO-15
Analytical Date: 07/29/17 20:10
Analyst: MB

Date Collected: 07/26/17 16:05
Date Received: 07/27/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.336	0.200	--	1.66	0.989	--		1
Chloromethane	0.704	0.200	--	1.45	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	42.0	5.00	--	79.1	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	13.4	1.00	--	31.8	2.38	--		1
Trichlorofluoromethane	0.255	0.200	--	1.43	1.12	--		1
Isopropanol	18.7	0.500	--	46.0	1.23	--		1
Tertiary butyl Alcohol	0.701	0.500	--	2.13	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.510	0.500	--	1.50	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-03
 Client ID: IA-4
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 16:05
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.962	0.200	--	3.94	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.358	0.200	--	1.35	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-03
 Client ID: IA-4
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 16:05
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	86		60-140
Bromochloromethane	87		60-140
chlorobenzene-d5	76		60-140



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-03
Client ID: IA-4
Sample Location: 145 MARCUS BLVD
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 07/29/17 20:10
Analyst: MB

Date Collected: 07/26/17 16:05
Date Received: 07/27/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.076	0.020	--	0.478	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	85		60-140
bromochloromethane	89		60-140
chlorobenzene-d5	84		60-140



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-04
Client ID: IA-2
Sample Location: 145 MARCUS BLVD
Matrix: Air
Analytical Method: 48,TO-15
Analytical Date: 07/29/17 21:21
Analyst: MB

Date Collected: 07/26/17 16:10
Date Received: 07/27/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.318	0.200	--	1.57	0.989	--		1
Chloromethane	0.658	0.200	--	1.36	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	35.6	5.00	--	67.1	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	11.3	1.00	--	26.8	2.38	--		1
Trichlorofluoromethane	0.327	0.200	--	1.84	1.12	--		1
Isopropanol	26.0	0.500	--	63.9	1.23	--		1
Tertiary butyl Alcohol	0.633	0.500	--	1.92	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.578	0.500	--	1.70	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-04
 Client ID: IA-2
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 16:10
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.320	0.200	--	1.31	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.417	0.200	--	1.57	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	0.229	0.200	--	0.975	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-04
 Client ID: IA-2
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 16:10
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	88		60-140
Bromochloromethane	88		60-140
chlorobenzene-d5	80		60-140



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-04
Client ID: IA-2
Sample Location: 145 MARCUS BLVD
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 07/29/17 21:21
Analyst: MB

Date Collected: 07/26/17 16:10
Date Received: 07/27/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	0.024	0.020	--	0.131	0.109	--		1
Carbon tetrachloride	0.075	0.020	--	0.472	0.126	--		1
Trichloroethene	0.032	0.020	--	0.172	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	87		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	86		60-140



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-05
 Client ID: IA-8
 Sample Location: 145 MARCUS BLVD
 Matrix: Air
 Analytical Method: 48,TO-15
 Analytical Date: 07/29/17 21:57
 Analyst: MB

Date Collected: 07/26/17 16:25
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.350	0.200	--	1.73	0.989	--		1
Chloromethane	0.781	0.200	--	1.61	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	80.2	5.00	--	151	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	13.7	1.00	--	32.5	2.38	--		1
Trichlorofluoromethane	0.206	0.200	--	1.16	1.12	--		1
Isopropanol	5.49	0.500	--	13.5	1.23	--		1
Tertiary butyl Alcohol	0.614	0.500	--	1.86	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.593	0.500	--	1.75	1.47	--		1
Ethyl Acetate	0.748	0.500	--	2.70	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-05
 Client ID: IA-8
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 16:25
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.465	0.200	--	1.75	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-05
 Client ID: IA-8
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 16:25
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	87		60-140
Bromochloromethane	89		60-140
chlorobenzene-d5	77		60-140



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-05
Client ID: IA-8
Sample Location: 145 MARCUS BLVD
Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 07/29/17 21:57
Analyst: MB

Date Collected: 07/26/17 16:25
Date Received: 07/27/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.077	0.020	--	0.484	0.126	--		1
Trichloroethene	0.108	0.020	--	0.580	0.107	--		1
Tetrachloroethene	0.031	0.020	--	0.210	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	86		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	85		60-140



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-06
 Client ID: IA-3
 Sample Location: 145 MARCUS BLVD
 Matrix: Air
 Analytical Method: 48,TO-15
 Analytical Date: 07/29/17 22:32
 Analyst: MB

Date Collected: 07/26/17 16:20
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.292	0.200	--	1.44	0.989	--		1
Chloromethane	0.732	0.200	--	1.51	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	83.4	5.00	--	157	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	14.4	1.00	--	34.2	2.38	--		1
Trichlorofluoromethane	0.246	0.200	--	1.38	1.12	--		1
Isopropanol	5.54	0.500	--	13.6	1.23	--		1
Tertiary butyl Alcohol	0.605	0.500	--	1.83	1.52	--		1
Methylene chloride	0.664	0.500	--	2.31	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.616	0.500	--	1.82	1.47	--		1
Ethyl Acetate	0.741	0.500	--	2.67	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-06
 Client ID: IA-3
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 16:20
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.742	0.200	--	2.80	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-06
 Client ID: IA-3
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 16:20
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	85		60-140
Bromochloromethane	88		60-140
chlorobenzene-d5	76		60-140



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-06
Client ID: IA-3
Sample Location: 145 MARCUS BLVD
Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 07/29/17 22:32
Analyst: MB

Date Collected: 07/26/17 16:20
Date Received: 07/27/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.078	0.020	--	0.491	0.126	--		1
Trichloroethene	0.114	0.020	--	0.613	0.107	--		1
Tetrachloroethene	0.062	0.020	--	0.420	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	85		60-140
bromochloromethane	89		60-140
chlorobenzene-d5	84		60-140



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-07
 Client ID: IA-5
 Sample Location: 145 MARCUS BLVD
 Matrix: Air
 Analytical Method: 48,TO-15
 Analytical Date: 07/29/17 23:07
 Analyst: MB

Date Collected: 07/26/17 16:15
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.337	0.200	--	1.67	0.989	--		1
Chloromethane	0.714	0.200	--	1.47	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	36.4	5.00	--	68.6	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	10.8	1.00	--	25.7	2.38	--		1
Trichlorofluoromethane	0.218	0.200	--	1.23	1.12	--		1
Isopropanol	3.06	0.500	--	7.52	1.23	--		1
Tertiary butyl Alcohol	0.547	0.500	--	1.66	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	0.595	0.500	--	2.14	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-07
 Client ID: IA-5
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 16:15
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.361	0.200	--	1.36	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-07
 Client ID: IA-5
 Sample Location: 145 MARCUS BLVD

Date Collected: 07/26/17 16:15
 Date Received: 07/27/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	85		60-140
Bromochloromethane	87		60-140
chlorobenzene-d5	75		60-140



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**SAMPLE RESULTS**

Lab ID: L1726012-07
Client ID: IA-5
Sample Location: 145 MARCUS BLVD
Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 07/29/17 23:07
Analyst: MB

Date Collected: 07/26/17 16:15
Date Received: 07/27/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.077	0.020	--	0.484	0.126	--		1
Trichloroethene	0.033	0.020	--	0.177	0.107	--		1
Tetrachloroethene	0.048	0.020	--	0.325	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	85		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	82		60-140



Project Name: MAR1601

Lab Number: L1726012

Project Number: MAR1601

Report Date: 08/02/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 07/29/17 14:35

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 02-07 Batch: WG1027096-4								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1



Project Name: MAR1601

Lab Number: L1726012

Project Number: MAR1601

Report Date: 08/02/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 07/29/17 14:35

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 02-07 Batch: WG1027096-4								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1



Project Name: MAR1601

Lab Number: L1726012

Project Number: MAR1601

Report Date: 08/02/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 07/29/17 14:35

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 02-07 Batch: WG1027096-4								
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: MAR1601

Lab Number: L1726012

Project Number: MAR1601

Report Date: 08/02/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15-SIM

Analytical Date: 07/29/17 15:12

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 03-07 Batch: WG1027097-4								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.020	--	ND	0.053	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1



Project Name: MAR1601

Lab Number: L1726012

Project Number: MAR1601

Report Date: 08/02/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15-SIM

Analytical Date: 07/29/17 15:12

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 03-07 Batch: WG1027097-4								
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1



Project Name: MAR1601

Lab Number: L1726012

Project Number: MAR1601

Report Date: 08/02/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15-SIM

Analytical Date: 07/29/17 15:12

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 03-07 Batch: WG1027097-4								
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
1,2,3-Trichloropropane	ND	0.020	--	ND	0.121	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1



Project Name: MAR1601

Lab Number: L1726012

Project Number: MAR1601

Report Date: 08/02/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15-SIM

Analytical Date: 07/29/17 15:12

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 03-07 Batch: WG1027097-4								
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 02-07 Batch: WG1027096-3								
Chlorodifluoromethane	94		-		70-130	-		
Propylene	119		-		70-130	-		
Propane	91		-		70-130	-		
Dichlorodifluoromethane	91		-		70-130	-		
Chloromethane	114		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	108		-		70-130	-		
Methanol	108		-		70-130	-		
Vinyl chloride	109		-		70-130	-		
1,3-Butadiene	115		-		70-130	-		
Butane	101		-		70-130	-		
Bromomethane	101		-		70-130	-		
Chloroethane	106		-		70-130	-		
Ethyl Alcohol	110		-		70-130	-		
Dichlorofluoromethane	98		-		70-130	-		
Vinyl bromide	98		-		70-130	-		
Acrolein	101		-		70-130	-		
Acetone	113		-		70-130	-		
Acetonitrile	110		-		70-130	-		
Trichlorofluoromethane	102		-		70-130	-		
iso-Propyl Alcohol	115		-		70-130	-		
Acrylonitrile	98		-		70-130	-		
Pentane	105		-		70-130	-		
Ethyl ether	108		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 02-07 Batch: WG1027096-3								
1,1-Dichloroethene	106		-		70-130	-		
tert-Butyl Alcohol	93		-		70-130	-		
Methylene chloride	114		-		70-130	-		
3-Chloropropene	119		-		70-130	-		
Carbon disulfide	101		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	103		-		70-130	-		
trans-1,2-Dichloroethene	85		-		70-130	-		
1,1-Dichloroethane	90		-		70-130	-		
Methyl tert butyl ether	83		-		70-130	-		
Vinyl acetate	128		-		70-130	-		
2-Butanone	97		-		70-130	-		
cis-1,2-Dichloroethene	97		-		70-130	-		
Ethyl Acetate	101		-		70-130	-		
Chloroform	95		-		70-130	-		
Tetrahydrofuran	93		-		70-130	-		
2,2-Dichloropropane	82		-		70-130	-		
1,2-Dichloroethane	95		-		70-130	-		
n-Hexane	112		-		70-130	-		
Isopropyl Ether	99		-		70-130	-		
Ethyl-Tert-Butyl-Ether	95		-		70-130	-		
1,1,1-Trichloroethane	103		-		70-130	-		
1,1-Dichloropropene	100		-		70-130	-		
Benzene	106		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 02-07 Batch: WG1027096-3								
Carbon tetrachloride	104		-		70-130	-		
Cyclohexane	109		-		70-130	-		
Tertiary-Amyl Methyl Ether	88		-		70-130	-		
Dibromomethane	98		-		70-130	-		
1,2-Dichloropropane	112		-		70-130	-		
Bromodichloromethane	109		-		70-130	-		
1,4-Dioxane	108		-		70-130	-		
Trichloroethene	106		-		70-130	-		
2,2,4-Trimethylpentane	112		-		70-130	-		
Methyl Methacrylate	116		-		70-130	-		
Heptane	114		-		70-130	-		
cis-1,3-Dichloropropene	112		-		70-130	-		
4-Methyl-2-pentanone	113		-		70-130	-		
trans-1,3-Dichloropropene	96		-		70-130	-		
1,1,2-Trichloroethane	109		-		70-130	-		
Toluene	99		-		70-130	-		
1,3-Dichloropropane	92		-		70-130	-		
2-Hexanone	100		-		70-130	-		
Dibromochloromethane	103		-		70-130	-		
1,2-Dibromoethane	99		-		70-130	-		
Butyl Acetate	77		-		70-130	-		
Octane	89		-		70-130	-		
Tetrachloroethene	99		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 02-07 Batch: WG1027096-3								
1,1,1,2-Tetrachloroethane	92		-		70-130	-		
Chlorobenzene	100		-		70-130	-		
Ethylbenzene	99		-		70-130	-		
p/m-Xylene	99		-		70-130	-		
Bromoform	105		-		70-130	-		
Styrene	101		-		70-130	-		
1,1,2,2-Tetrachloroethane	112		-		70-130	-		
o-Xylene	106		-		70-130	-		
1,2,3-Trichloropropane	96		-		70-130	-		
Nonane (C9)	100		-		70-130	-		
Isopropylbenzene	99		-		70-130	-		
Bromobenzene	94		-		70-130	-		
o-Chlorotoluene	95		-		70-130	-		
n-Propylbenzene	100		-		70-130	-		
p-Chlorotoluene	92		-		70-130	-		
4-Ethyltoluene	96		-		70-130	-		
1,3,5-Trimethylbenzene	111		-		70-130	-		
tert-Butylbenzene	105		-		70-130	-		
1,2,4-Trimethylbenzene	113		-		70-130	-		
Decane (C10)	104		-		70-130	-		
Benzyl chloride	104		-		70-130	-		
1,3-Dichlorobenzene	109		-		70-130	-		
1,4-Dichlorobenzene	110		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 02-07 Batch: WG1027096-3								
sec-Butylbenzene	105		-		70-130	-		
p-Isopropyltoluene	93		-		70-130	-		
1,2-Dichlorobenzene	110		-		70-130	-		
n-Butylbenzene	107		-		70-130	-		
1,2-Dibromo-3-chloropropane	92		-		70-130	-		
Undecane	112		-		70-130	-		
Dodecane (C12)	114		-		70-130	-		
1,2,4-Trichlorobenzene	118		-		70-130	-		
Naphthalene	101		-		70-130	-		
1,2,3-Trichlorobenzene	109		-		70-130	-		
Hexachlorobutadiene	114		-		70-130	-		

Lab Control Sample Analysis Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-07 Batch: WG1027097-3								
Propylene	111		-		70-130	-		25
Dichlorodifluoromethane	97		-		70-130	-		25
Chloromethane	111		-		70-130	-		25
1,2-Dichloro-1,1,2,2-tetrafluoroethane	106		-		70-130	-		25
Vinyl chloride	107		-		70-130	-		25
1,3-Butadiene	112		-		70-130	-		25
Bromomethane	104		-		70-130	-		25
Chloroethane	106		-		70-130	-		25
Ethyl Alcohol	108		-		70-130	-		25
Vinyl bromide	99		-		70-130	-		25
Acetone	106		-		70-130	-		25
Trichlorofluoromethane	103		-		70-130	-		25
iso-Propyl Alcohol	118		-		70-130	-		25
Acrylonitrile	104		-		70-130	-		25
1,1-Dichloroethene	105		-		70-130	-		25
tert-Butyl Alcohol ¹	92		-		70-130	-		25
Methylene chloride	116		-		70-130	-		25
3-Chloropropene	115		-		70-130	-		25
Carbon disulfide	100		-		70-130	-		25
1,1,2-Trichloro-1,2,2-Trifluoroethane	104		-		70-130	-		25
Halothane	120		-		70-130	-		25
trans-1,2-Dichloroethene	113		-		70-130	-		25
1,1-Dichloroethane	125		-		70-130	-		25

Lab Control Sample Analysis Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-07 Batch: WG1027097-3								
Methyl tert butyl ether	93		-		70-130	-		25
Vinyl acetate	121		-		70-130	-		25
2-Butanone	95		-		70-130	-		25
cis-1,2-Dichloroethene	92		-		70-130	-		25
Ethyl Acetate	100		-		70-130	-		25
Chloroform	96		-		70-130	-		25
Tetrahydrofuran	93		-		70-130	-		25
1,2-Dichloroethane	90		-		70-130	-		25
n-Hexane	105		-		70-130	-		25
1,1,1-Trichloroethane	102		-		70-130	-		25
Benzene	101		-		70-130	-		25
Carbon tetrachloride	105		-		70-130	-		25
Cyclohexane	102		-		70-130	-		25
Dibromomethane ¹	89		-		70-130	-		25
1,2-Dichloropropane	109		-		70-130	-		25
Bromodichloromethane	108		-		70-130	-		25
1,4-Dioxane	105		-		70-130	-		25
Trichloroethene	99		-		70-130	-		25
2,2,4-Trimethylpentane	109		-		70-130	-		25
cis-1,3-Dichloropropene	108		-		70-130	-		25
4-Methyl-2-pentanone	110		-		70-130	-		25
trans-1,3-Dichloropropene	90		-		70-130	-		25
1,1,2-Trichloroethane	108		-		70-130	-		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-07 Batch: WG1027097-3								
Toluene	98		-		70-130	-		25
2-Hexanone	95		-		70-130	-		25
Dibromochloromethane	108		-		70-130	-		25
1,2-Dibromoethane	105		-		70-130	-		25
Tetrachloroethene	93		-		70-130	-		25
1,1,1,2-Tetrachloroethane	97		-		70-130	-		25
Chlorobenzene	103		-		70-130	-		25
Ethylbenzene	99		-		70-130	-		25
p/m-Xylene	102		-		70-130	-		25
Bromoform	105		-		70-130	-		25
Styrene	101		-		70-130	-		25
1,1,2,2-Tetrachloroethane	114		-		70-130	-		25
o-Xylene	103		-		70-130	-		25
1,2,3-Trichloropropane ¹	101		-		70-130	-		25
Isopropylbenzene	98		-		70-130	-		25
Bromobenzene ¹	97		-		70-130	-		25
4-Ethyltoluene	107		-		70-130	-		25
1,3,5-Trimethylbenzene	108		-		70-130	-		25
1,2,4-Trimethylbenzene	116		-		70-130	-		25
Benzyl chloride	102		-		70-130	-		25
1,3-Dichlorobenzene	115		-		70-130	-		25
1,4-Dichlorobenzene	113		-		70-130	-		25
sec-Butylbenzene	101		-		70-130	-		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-07 Batch: WG1027097-3								
p-Isopropyltoluene	93		-		70-130	-		25
1,2-Dichlorobenzene	114		-		70-130	-		25
n-Butylbenzene	107		-		70-130	-		25
1,2,4-Trichlorobenzene	127		-		70-130	-		25
Naphthalene	99		-		70-130	-		25
1,2,3-Trichlorobenzene	114		-		70-130	-		25
Hexachlorobutadiene	117		-		70-130	-		25

Lab Duplicate Analysis Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 02-07 QC Batch ID: WG1027096-5 QC Sample: L1726012-03 Client ID: IA-4						
Dichlorodifluoromethane	0.336	0.366	ppbV	9		25
Chloromethane	0.704	0.735	ppbV	4		25
Freon-114	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	42.0	40.5	ppbV	4		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	13.4	13.3	ppbV	1		25
Trichlorofluoromethane	0.255	0.274	ppbV	7		25
Isopropanol	18.7	18.2	ppbV	3		25
Tertiary butyl Alcohol	0.701	0.647	ppbV	8		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25
2-Butanone	0.510	0.529	ppbV	4		25
Ethyl Acetate	ND	0.528	ppbV	NC		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 02-07 QC Batch ID: WG1027096-5 QC Sample: L1726012-03 Client ID: IA-4						
Chloroform	ND	ND	ppbV	NC		25
Tetrahydrofuran	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	ND	ND	ppbV	NC		25
Benzene	ND	ND	ppbV	NC		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	0.962	0.934	ppbV	3		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
Toluene	0.358	0.375	ppbV	5		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis Batch Quality Control

Project Name: MAR1601

Project Number: MAR1601

Lab Number: L1726012

Report Date: 08/02/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 02-07 QC Batch ID: WG1027096-5 QC Sample: L1726012-03 Client ID: IA-4						
p/m-Xylene	ND	ND	ppbV	NC		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	ND	ND	ppbV	NC		25
4-Ethyltoluene	ND	ND	ppbV	NC		25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC		25
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-07 QC Batch ID: WG1027097-5 QC Sample: L1726012-03 Client ID: IA-4						
Vinyl chloride	ND	ND	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Carbon tetrachloride	0.076	0.079	ppbV	4		25
Trichloroethene	ND	ND	ppbV	NC		25
Tetrachloroethene	ND	ND	ppbV	NC		25

Project Name: MAR1601

Project Number: MAR1601

Serial_No:08021716:16
Lab Number: L1726012

Report Date: 08/02/17

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1726012-01	SVE-SOUTH (INF)	0744	Flow 3	07/24/17	245751		-	-	-	Pass	17.8	19.3	8
L1726012-01	SVE-SOUTH (INF)	523	2.7L Can	07/24/17	245751	L1724633-01	Pass	-29.3	-28.7	-	-	-	-
L1726012-02	SVE-NORTH (INF)	0310	Flow 5	07/24/17	245751		-	-	-	Pass	17.6	16.4	7
L1726012-02	SVE-NORTH (INF)	541	2.7L Can	07/24/17	245751	L1724633-01	Pass	-29.3	0.7	-	-	-	-
L1726012-03	IA-4	0364	Flow 5	07/24/17	245751		-	-	-	Pass	4.3	4.4	2
L1726012-03	IA-4	551	2.7L Can	07/24/17	245751	L1724633-01	Pass	-29.3	-8.7	-	-	-	-
L1726012-04	IA-2	0186	Flow 3	07/24/17	245751		-	-	-	Pass	4.5	5.0	11
L1726012-04	IA-2	2238	2.7L Can	07/24/17	245751	L1724633-01	Pass	-29.4	-4.4	-	-	-	-
L1726012-05	IA-8	0089	Flow 5	07/24/17	245751		-	-	-	Pass	4.4	4.8	9
L1726012-05	IA-8	149	2.7L Can	07/24/17	245751	L1724633-01	Pass	-29.3	-6.3	-	-	-	-
L1726012-06	IA-3	0012	Flow 5	07/24/17	245751		-	-	-	Pass	4.5	4.6	2
L1726012-06	IA-3	2343	2.7L CAN	07/24/17	245751	L1724633-01	Pass	-28.6	-5.7	-	-	-	-
L1726012-07	IA-5	0201	Flow 5	07/24/17	245751		-	-	-	Pass	4.3	4.5	5
L1726012-07	IA-5	126	2.7L Can	07/24/17	245751	L1724633-01	Pass	-29.5	-7.3	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1724633
Report Date: 08/02/17

Air Canister Certification Results

Lab ID: L1724633-01
Client ID: CAN 238 SHELF 14
Sample Location:
Matrix: Air
Analytical Method: 48,TO-15
Analytical Date: 07/19/17 19:31
Analyst: MB

Date Collected: 07/18/17 16:00
Date Received: 07/19/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1724633
Report Date: 08/02/17

Air Canister Certification Results

Lab ID: L1724633-01
Client ID: CAN 238 SHELF 14
Sample Location:

Date Collected: 07/18/17 16:00
Date Received: 07/19/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1724633
Report Date: 08/02/17

Air Canister Certification Results

Lab ID: L1724633-01
Client ID: CAN 238 SHELF 14
Sample Location:

Date Collected: 07/18/17 16:00
Date Received: 07/19/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1724633
Report Date: 08/02/17

Air Canister Certification Results

Lab ID: L1724633-01
Client ID: CAN 238 SHELF 14
Sample Location:

Date Collected: 07/18/17 16:00
Date Received: 07/19/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L1724633**Project Number:** CANISTER QC BAT**Report Date:** 08/02/17**Air Canister Certification Results**

Lab ID: L1724633-01

Date Collected: 07/18/17 16:00

Client ID: CAN 238 SHELF 14

Date Received: 07/19/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	91		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	88		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1724633
Report Date: 08/02/17

Air Canister Certification Results

Lab ID: L1724633-01
Client ID: CAN 238 SHELF 14
Sample Location:
Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 07/19/17 17:07
Analyst: MB

Date Collected: 07/18/17 16:00
Date Received: 07/19/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.020	--	ND	0.053	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1724633
Report Date: 08/02/17

Air Canister Certification Results

Lab ID: L1724633-01
Client ID: CAN 238 SHELF 14
Sample Location:

Date Collected: 07/18/17 16:00
Date Received: 07/19/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L1724633**Project Number:** CANISTER QC BAT**Report Date:** 08/02/17**Air Canister Certification Results**

Lab ID: L1724633-01

Date Collected: 07/18/17 16:00

Client ID: CAN 238 SHELF 14

Date Received: 07/19/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	91		60-140
bromochloromethane	93		60-140
chlorobenzene-d5	90		60-140

Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information**Cooler** **Custody Seal**

N/A Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1726012-01A	Canister - 2.7 Liter	N/A	N/A	N/A		Y	Absent		CANCELLED()
L1726012-02A	Canister - 2.7 Liter	N/A	N/A	N/A		Y	Absent		TO15-LL(30)
L1726012-03A	Canister - 2.7 Liter	N/A	N/A	N/A		Y	Absent		TO15-LL(30),TO15-SIM(30)
L1726012-04A	Canister - 2.7 Liter	N/A	N/A	N/A		Y	Absent		TO15-LL(30),TO15-SIM(30)
L1726012-05A	Canister - 2.7 Liter	N/A	N/A	N/A		Y	Absent		TO15-LL(30),TO15-SIM(30)
L1726012-06A	Canister - 2.7 Liter	N/A	N/A	N/A		Y	Absent		TO15-LL(30),TO15-SIM(30)
L1726012-07A	Canister - 2.7 Liter	N/A	N/A	N/A		Y	Absent		TO15-LL(30),TO15-SIM(30)

Project Name: MAR1601
Project Number: MAR1601

Lab Number: L1726012
Report Date: 08/02/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report



Project Name: MAR1601**Lab Number:** L1726012**Project Number:** MAR1601**Report Date:** 08/02/17**Data Qualifiers**

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: MAR1601
Project Number: MAR1601

Lab Number: L1726012
Report Date: 08/02/17

REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 10

Department: **Quality Assurance**

Published Date: 1/16/2017 11:00:05 AM

Title: **Certificate/Approval Program Summary**

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 300:** DW: Bromide**EPA 6860:** NPW and SCM: Perchlorate**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation**EPA 9012B:** NPW: Total Cyanide**EPA 9050A:** NPW: Specific Conductance**SM3500:** NPW: Ferrous Iron**SM4500:** NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.**SM5310C:** DW: Dissolved Organic Carbon**Mansfield Facility****SM 2540D:** TSS**EPA 3005A** NPW**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.****EPA 624:** Volatile Halocarbons & Aromatics,**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.****Mansfield Facility:****Drinking Water****EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



CHAIN OF CUSTODY

AIR ANALYSIS

PAGE 1 OF 1

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: PWGC

Address: 630 Johnson Ave
Bohemia, NY 11716

Phone: 631-589-6353

Fax: _____

Email: Thomasm@pwgrosser.com

☐ These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: ☐

Project Information

Project Name: Computer Circuits

Project Location: 145 Marcus Blvd, Hauppauge NY

Project #:

Project Manager: Thomas Melia

ALPHA Quote #:

Turn-Around Time

☒ Standard☐ RUSH (only confirmed if pre-approved!)

Date Due:

Time:

Date Rec'd in Lab:

7/28/17

Report Information - Data Deliverables

☐ FAX☒ ADEX

Criteria Checker: _____

(Default based on Regulatory Criteria Indicated)

Other Formats: _____

☐ EMAIL (standard pdf report)☒ Additional Deliverables:

Category B

Report to: (if different than Project Manager)

ALPHA Job #:

L1726012

Billing Information

☒ Same as Client info

PO #:

Regulatory Requirements/Report Limits

State/Fed

Program

Res / Comm

ANALYSIS

TO-15
TO-15 SIM (TCE)
APH
Fixed Gases
Sulfides & Mercaptans by TO-15

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION						Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-15	TO-15 SIM (TCE)	APH	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
		End Date	Start Time	End Time	Initial Vacuum	Final Vacuum												
6012-01	SVE-South (INF)	7-26-17	0805	1005	-29.3	-40.10	SV	KC	2.7L	523	0744	X						
02	SVE-North (INF)		0800	0930	-29.3	-0.90	SV				541	0310						
03	IA-4		0845	1605	-30.27	-9.49	AA				551	0364	X					
04	IA-2		0850	1610	-29.92	-4.50					2238	0186						
05	IA-8		0900	1625	-30.36	-6.52					149	0089						
06	IA-3		0905	1620	-29.33	-6.03					2343	0012						
07	IA-5		0855	1615	-30.29	-7.56					126	0201						

*SAMPLE MATRIX CODES

AA = Ambient Air (Indoor/Outdoor)

SV = Soil Vapor/Landfill Gas/SVE

Other = Please Specify

Container Type

Relinquished By:

Date/Time

Received By:

Date/Time:

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



ANALYTICAL REPORT

Lab Number:	L1726929
Client:	P. W. Grosser 630 Johnson Avenue Suite 7 Bohemia, NY 11716
ATTN:	Thomas Melia
Phone:	(631) 589-6353
Project Name:	COMPUTER CIRCUITS
Project Number:	MAR1701
Report Date:	08/10/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), NJ NELAP (MA015), CT (PH-0141), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-13-00067), USFWS (Permit #LE2069641).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1726929
Report Date: 08/10/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1726929-01	SVE-SOUTH (INF)	SOIL_VAPOR	145 MARCUS BLVD, HAUPPAUGE, NY	08/02/17 13:30	08/03/17

Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1726929
Report Date: 08/10/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1726929
Report Date: 08/10/17

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on August 2, 2017. The canister certification results are provided as an addendum.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Christopher J. Anderson

Title: Technical Director/Representative

Date: 08/10/17

AIR

Project Name: COMPUTER CIRCUITS**Lab Number:** L1726929**Project Number:** MAR1701**Report Date:** 08/10/17**SAMPLE RESULTS**

Lab ID: L1726929-01
 Client ID: SVE-SOUTH (INF)
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Soil_Vapor
 Analytical Method: 48,TO-15
 Analytical Date: 08/07/17 18:49
 Analyst: MB

Date Collected: 08/02/17 13:30
 Date Received: 08/03/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.346	0.200	--	1.71	0.989	--		1
Chloromethane	0.603	0.200	--	1.25	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	23.5	5.00	--	44.3	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	60.7	1.00	--	144	2.38	--		1
Trichlorofluoromethane	0.232	0.200	--	1.30	1.12	--		1
Isopropanol	4.34	0.500	--	10.7	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	0.676	0.500	--	2.35	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	11.3	0.500	--	33.3	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1726929**Project Number:** MAR1701**Report Date:** 08/10/17**SAMPLE RESULTS**

Lab ID: L1726929-01

Date Collected: 08/02/17 13:30

Client ID: SVE-SOUTH (INF)

Date Received: 08/03/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.288	0.200	--	0.920	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	2.96	0.200	--	15.9	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	0.831	0.500	--	3.41	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.347	0.200	--	1.31	0.754	--		1
2-Hexanone	5.00	0.200	--	20.5	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	0.571	0.200	--	3.87	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1726929**Project Number:** MAR1701**Report Date:** 08/10/17**SAMPLE RESULTS**

Lab ID: L1726929-01

Date Collected: 08/02/17 13:30

Client ID: SVE-SOUTH (INF)

Date Received: 08/03/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	91		60-140
Bromochloromethane	89		60-140
chlorobenzene-d5	85		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1726929**Project Number:** MAR1701**Report Date:** 08/10/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 08/07/17 16:08

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01 Batch: WG1029650-4								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1726929**Project Number:** MAR1701**Report Date:** 08/10/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 08/07/17 16:08

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01 Batch: WG1029650-4								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1



Project Name: COMPUTER CIRCUITS

Lab Number: L1726929

Project Number: MAR1701

Report Date: 08/10/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 08/07/17 16:08

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01 Batch: WG1029650-4								
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds



Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1726929

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01 Batch: WG1029650-3								
Chlorodifluoromethane	81		-		70-130	-		
Propylene	102		-		70-130	-		
Propane	94		-		70-130	-		
Dichlorodifluoromethane	70		-		70-130	-		
Chloromethane	100		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	93		-		70-130	-		
Methanol	110		-		70-130	-		
Vinyl chloride	95		-		70-130	-		
1,3-Butadiene	102		-		70-130	-		
Butane	108		-		70-130	-		
Bromomethane	92		-		70-130	-		
Chloroethane	94		-		70-130	-		
Ethyl Alcohol	116		-		70-130	-		
Dichlorofluoromethane	92		-		70-130	-		
Vinyl bromide	86		-		70-130	-		
Acrolein	93		-		70-130	-		
Acetone	117		-		70-130	-		
Acetonitrile	100		-		70-130	-		
Trichlorofluoromethane	96		-		70-130	-		
iso-Propyl Alcohol	112		-		70-130	-		
Acrylonitrile	100		-		70-130	-		
Pentane	102		-		70-130	-		
Ethyl ether	109		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1726929

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01 Batch: WG1029650-3								
1,1-Dichloroethene	100		-		70-130	-		
tert-Butyl Alcohol	92		-		70-130	-		
Methylene chloride	119		-		70-130	-		
3-Chloropropene	114		-		70-130	-		
Carbon disulfide	93		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	98		-		70-130	-		
trans-1,2-Dichloroethene	104		-		70-130	-		
1,1-Dichloroethane	108		-		70-130	-		
Methyl tert butyl ether	78		-		70-130	-		
Vinyl acetate	96		-		70-130	-		
2-Butanone	90		-		70-130	-		
cis-1,2-Dichloroethene	99		-		70-130	-		
Ethyl Acetate	96		-		70-130	-		
Chloroform	85		-		70-130	-		
Tetrahydrofuran	87		-		70-130	-		
2,2-Dichloropropane	74		-		70-130	-		
1,2-Dichloroethane	85		-		70-130	-		
n-Hexane	110		-		70-130	-		
Isopropyl Ether	92		-		70-130	-		
Ethyl-Tert-Butyl-Ether	97		-		70-130	-		
1,1,1-Trichloroethane	98		-		70-130	-		
1,1-Dichloropropene	96		-		70-130	-		
Benzene	102		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1726929

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01 Batch: WG1029650-3								
Carbon tetrachloride	98		-		70-130	-		
Cyclohexane	108		-		70-130	-		
Tertiary-Amyl Methyl Ether	92		-		70-130	-		
Dibromomethane	99		-		70-130	-		
1,2-Dichloropropane	112		-		70-130	-		
Bromodichloromethane	107		-		70-130	-		
1,4-Dioxane	103		-		70-130	-		
Trichloroethene	98		-		70-130	-		
2,2,4-Trimethylpentane	115		-		70-130	-		
Methyl Methacrylate	128		-		70-130	-		
Heptane	118		-		70-130	-		
cis-1,3-Dichloropropene	109		-		70-130	-		
4-Methyl-2-pentanone	124		-		70-130	-		
trans-1,3-Dichloropropene	92		-		70-130	-		
1,1,2-Trichloroethane	106		-		70-130	-		
Toluene	84		-		70-130	-		
1,3-Dichloropropane	84		-		70-130	-		
2-Hexanone	105		-		70-130	-		
Dibromochloromethane	88		-		70-130	-		
1,2-Dibromoethane	86		-		70-130	-		
Butyl Acetate	83		-		70-130	-		
Octane	77		-		70-130	-		
Tetrachloroethene	75		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1726929

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01 Batch: WG1029650-3								
1,1,1,2-Tetrachloroethane	79		-		70-130	-		
Chlorobenzene	85		-		70-130	-		
Ethylbenzene	86		-		70-130	-		
p/m-Xylene	88		-		70-130	-		
Bromoform	82		-		70-130	-		
Styrene	84		-		70-130	-		
1,1,2,2-Tetrachloroethane	100		-		70-130	-		
o-Xylene	92		-		70-130	-		
1,2,3-Trichloropropane	85		-		70-130	-		
Nonane (C9)	99		-		70-130	-		
Isopropylbenzene	81		-		70-130	-		
Bromobenzene	83		-		70-130	-		
o-Chlorotoluene	77		-		70-130	-		
n-Propylbenzene	79		-		70-130	-		
p-Chlorotoluene	79		-		70-130	-		
4-Ethyltoluene	84		-		70-130	-		
1,3,5-Trimethylbenzene	86		-		70-130	-		
tert-Butylbenzene	84		-		70-130	-		
1,2,4-Trimethylbenzene	95		-		70-130	-		
Decane (C10)	93		-		70-130	-		
Benzyl chloride	96		-		70-130	-		
1,3-Dichlorobenzene	84		-		70-130	-		
1,4-Dichlorobenzene	83		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1726929

Report Date: 08/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01 Batch: WG1029650-3								
sec-Butylbenzene	84		-		70-130	-		
p-Isopropyltoluene	74		-		70-130	-		
1,2-Dichlorobenzene	83		-		70-130	-		
n-Butylbenzene	90		-		70-130	-		
1,2-Dibromo-3-chloropropane	90		-		70-130	-		
Undecane	97		-		70-130	-		
Dodecane (C12)	109		-		70-130	-		
1,2,4-Trichlorobenzene	89		-		70-130	-		
Naphthalene	80		-		70-130	-		
1,2,3-Trichlorobenzene	82		-		70-130	-		
Hexachlorobutadiene	77		-		70-130	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1726929

Report Date: 08/10/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1029650-5 QC Sample: L1726929-01 Client ID: SVE-SOUTH (INF)						
Dichlorodifluoromethane	0.346	0.371	ppbV	7		25
Chloromethane	0.603	0.567	ppbV	6		25
Freon-114	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	23.5	23.6	ppbV	0		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	60.7	61.2	ppbV	1		25
Trichlorofluoromethane	0.232	0.239	ppbV	3		25
Isopropanol	4.34	4.60	ppbV	6		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
Tertiary butyl Alcohol	ND	ND	ppbV	NC		25
Methylene chloride	0.676	0.803	ppbV	17		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1726929

Report Date: 08/10/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1029650-5 QC Sample: L1726929-01 Client ID: SVE-SOUTH (INF)						
2-Butanone	11.3	11.5	ppbV	2		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
Ethyl Acetate	ND	ND	ppbV	NC		25
Chloroform	ND	ND	ppbV	NC		25
Tetrahydrofuran	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	ND	ND	ppbV	NC		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Benzene	0.288	0.276	ppbV	4		25
Carbon tetrachloride	ND	ND	ppbV	NC		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
Trichloroethene	2.96	3.01	ppbV	2		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	ND	ND	ppbV	NC		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	0.831	0.718	ppbV	15		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1726929

Report Date: 08/10/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1029650-5 QC Sample: L1726929-01 Client ID: SVE-SOUTH (INF)						
Toluene	0.347	0.348	ppbV	0		25
2-Hexanone	5.00	4.99	ppbV	0		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Tetrachloroethene	0.571	0.565	ppbV	1		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	ND	ND	ppbV	NC		25
p/m-Xylene	ND	ND	ppbV	NC		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	ND	ND	ppbV	NC		25
4-Ethyltoluene	ND	ND	ppbV	NC		25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC		25
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Serial_No:08101715:23
Lab Number: L1726929

Report Date: 08/10/17

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1726929-01	SVE-SOUTH (INF)	0883	SV200	08/02/17	246689		-	-	-	Pass	221	213	4
L1726929-01	SVE-SOUTH (INF)	2128	6.0L Can	08/02/17	246689	L1724305-01	Pass	-29.7	-6.7	-	-	-	-

Project Name:**Lab Number:** L1724305**Project Number:** CANISTER QC BAT**Report Date:** 08/10/17**Air Canister Certification Results**

Lab ID: L1724305-01
 Client ID: CAN 1600 SHELF 55
 Sample Location:
 Matrix: Air
 Analytical Method: 48,TO-15
 Analytical Date: 07/17/17 16:22
 Analyst: MB

Date Collected: 07/16/17 16:00
 Date Received: 07/17/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--		1



Project Name:**Lab Number:** L1724305**Project Number:** CANISTER QC BAT**Report Date:** 08/10/17**Air Canister Certification Results**

Lab ID: L1724305-01

Date Collected: 07/16/17 16:00

Client ID: CAN 1600 SHELF 55

Date Received: 07/17/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Isopropyl Ether	ND	0.200	--	ND	0.836	--		1
Ethyl-Tert-Butyl-Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Tertiary-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1



Project Name:

Lab Number: L1724305

Project Number: CANISTER QC BAT

Report Date: 08/10/17

Air Canister Certification Results

Lab ID: L1724305-01

Date Collected: 07/16/17 16:00

Client ID: CAN 1600 SHELF 55

Date Received: 07/17/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl Acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane (C9)	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1



Project Name:

Lab Number: L1724305

Project Number: CANISTER QC BAT

Report Date: 08/10/17

Air Canister Certification Results

Lab ID: L1724305-01

Date Collected: 07/16/17 16:00

Client ID: CAN 1600 SHELF 55

Date Received: 07/17/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
o-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
p-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane (C10)	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane (C12)	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds



Project Name:

Lab Number: L1724305

Project Number: CANISTER QC BAT

Report Date: 08/10/17

Air Canister Certification Results

Lab ID: L1724305-01

Date Collected: 07/16/17 16:00

Client ID: CAN 1600 SHELF 55

Date Received: 07/17/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	97		60-140
Bromochloromethane	96		60-140
chlorobenzene-d5	98		60-140

Project Name:**Lab Number:** L1724305**Project Number:** CANISTER QC BAT**Report Date:** 08/10/17**Air Canister Certification Results**

Lab ID: L1724305-01
 Client ID: CAN 1600 SHELF 55
 Sample Location:
 Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 07/17/17 16:22
 Analyst: MB

Date Collected: 07/16/17 16:00
 Date Received: 07/17/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.020	--	ND	0.053	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1



Project Name:

Lab Number: L1724305

Project Number: CANISTER QC BAT

Report Date: 08/10/17

Air Canister Certification Results

Lab ID: L1724305-01

Date Collected: 07/16/17 16:00

Client ID: CAN 1600 SHELF 55

Date Received: 07/17/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1



Project Name:**Lab Number:** L1724305**Project Number:** CANISTER QC BAT**Report Date:** 08/10/17**Air Canister Certification Results**

Lab ID: L1724305-01

Date Collected: 07/16/17 16:00

Client ID: CAN 1600 SHELF 55

Date Received: 07/17/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
1,2,3-Trichloropropane	ND	0.020	--	ND	0.121	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	99		60-140
bromochloromethane	98		60-140



Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Serial_No:08101715:23
Lab Number: L1726929
Report Date: 08/10/17

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
N/A	Absent

Container Information

Container ID	Container Type
---------------------	-----------------------

L1726929-01A	Canister - 6 Liter
--------------	--------------------

Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
N/A	NA			Y	Absent		TO15-LL(30)

Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1726929
Report Date: 08/10/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report



Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1726929
Report Date: 08/10/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1726929
Report Date: 08/10/17

REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 10

Department: **Quality Assurance**

Published Date: 1/16/2017 11:00:05 AM

Title: **Certificate/Approval Program Summary**

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 300:** DW: Bromide**EPA 6860:** NPW and SCM: Perchlorate**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation**EPA 9012B:** NPW: Total Cyanide**EPA 9050A:** NPW: Specific Conductance**SM3500:** NPW: Ferrous Iron**SM4500:** NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.**SM5310C:** DW: Dissolved Organic Carbon**Mansfield Facility****SM 2540D:** TSS**EPA 3005A** NPW**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.****EPA 624:** Volatile Halocarbons & Aromatics,**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.****Mansfield Facility:****Drinking Water****EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



ANALYTICAL REPORT

Lab Number:	L1746905
Client:	P. W. Grosser 630 Johnson Avenue Suite 7 Bohemia, NY 11716
ATTN:	Thomas Melia
Phone:	(631) 589-6353
Project Name:	COMPUTER CIRCUITS
Project Number:	MAR1701
Report Date:	12/28/17

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Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1746905
Report Date: 12/28/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1746905-01	SVE-SOUTH	SOIL_VAPOR	145 MARCUS BLVD, HAUPPAUGE, NY	12/19/17 10:35	12/20/17
L1746905-02	SVE-NORTH	SOIL_VAPOR	145 MARCUS BLVD, HAUPPAUGE, NY	12/19/17 10:15	12/20/17
L1746905-03	IA-4	AIR	145 MARCUS BLVD, HAUPPAUGE, NY	12/19/17 16:10	12/20/17
L1746905-04	IA-2	AIR	145 MARCUS BLVD, HAUPPAUGE, NY	12/19/17 16:16	12/20/17
L1746905-05	IA-8	AIR	145 MARCUS BLVD, HAUPPAUGE, NY	12/19/17 16:18	12/20/17
L1746905-06	IA-3	AIR	145 MARCUS BLVD, HAUPPAUGE, NY	12/19/17 16:19	12/20/17
L1746905-07	IA-5	AIR	145 MARCUS BLVD, HAUPPAUGE, NY	12/19/17 16:22	12/20/17

Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1746905
Report Date: 12/28/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1746905
Report Date: 12/28/17

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on December 15, 2017. The canister certification results are provided as an addendum.

The WG1077047-3 LCS recoveries for 1,2,4-trichlorobenzene (136%) and hexachlorobutadiene (132%) are above the upper 130% acceptance limit. All samples associated with this LCS do not have reportable amounts of these analytes.

The WG1077046-5 Laboratory Duplicate RPD for dichlorodifluoromethane (36%), performed on L1746905-05, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Kara Soroko

Title: Technical Director/Representative

Date: 12/28/17

AIR

Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-01
 Client ID: SVE-SOUTH
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Soil_Vapor
 Analytical Method: 48,TO-15
 Analytical Date: 12/28/17 01:42
 Analyst: RY

Date Collected: 12/19/17 10:35
 Date Received: 12/20/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.401	0.200	--	1.98	0.989	--		1
Chloromethane	0.506	0.200	--	1.04	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	9.37	5.00	--	17.7	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	4.57	1.00	--	10.9	2.38	--		1
Trichlorofluoromethane	0.289	0.200	--	1.62	1.12	--		1
Isopropanol	1.77	0.500	--	4.35	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-01

Date Collected: 12/19/17 10:35

Client ID: SVE-SOUTH

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.255	0.200	--	0.815	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	0.753	0.200	--	4.05	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.390	0.200	--	1.47	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-01

Date Collected: 12/19/17 10:35

Client ID: SVE-SOUTH

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	76		60-140
Bromochloromethane	86		60-140
chlorobenzene-d5	76		60-140



Project Name: COMPUTER CIRCUITS**Project Number:** MAR1701**Lab Number:** L1746905**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-02
Client ID: SVE-NORTH
Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 12/28/17 02:14
Analyst: RY

Date Collected: 12/19/17 10:15
Date Received: 12/20/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.590	0.200	--	2.92	0.989	--		1
Chloromethane	0.265	0.200	--	0.547	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	6.32	1.00	--	15.0	2.38	--		1
Trichlorofluoromethane	0.424	0.200	--	2.38	1.12	--		1
Isopropanol	4.65	0.500	--	11.4	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	0.719	0.200	--	5.51	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	0.213	0.200	--	0.845	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-02

Date Collected: 12/19/17 10:15

Client ID: SVE-NORTH

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	0.676	0.200	--	3.69	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	8.98	0.200	--	48.3	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	6.28	0.200	--	42.6	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-02

Date Collected: 12/19/17 10:15

Client ID: SVE-NORTH

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	72		60-140
Bromochloromethane	84		60-140
chlorobenzene-d5	80		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-03
 Client ID: IA-4
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Air
 Analytical Method: 48,TO-15
 Analytical Date: 12/27/17 22:26
 Analyst: RY

Date Collected: 12/19/17 16:10
 Date Received: 12/20/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.398	0.200	--	1.97	0.989	--		1
Chloromethane	0.575	0.200	--	1.19	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	33.5	5.00	--	63.1	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	9.72	1.00	--	23.1	2.38	--		1
Trichlorofluoromethane	0.390	0.200	--	2.19	1.12	--		1
Isopropanol	54.4	0.500	--	134	1.23	--		1
Tertiary butyl Alcohol	0.566	0.500	--	1.72	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-03

Date Collected: 12/19/17 16:10

Client ID: IA-4

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.309	0.200	--	0.987	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.335	0.200	--	1.37	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.546	0.200	--	2.06	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-03

Date Collected: 12/19/17 16:10

Client ID: IA-4

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	76		60-140
Bromochloromethane	85		60-140
chlorobenzene-d5	79		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-03
 Client ID: IA-4
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/27/17 22:26
 Analyst: RY

Date Collected: 12/19/17 16:10
 Date Received: 12/20/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.091	0.020	--	0.572	0.126	--		1
Trichloroethene	0.059	0.020	--	0.317	0.107	--		1
Tetrachloroethene	0.061	0.020	--	0.414	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	76		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	79		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-04
 Client ID: IA-2
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Air
 Analytical Method: 48,TO-15
 Analytical Date: 12/27/17 22:59
 Analyst: RY

Date Collected: 12/19/17 16:16
 Date Received: 12/20/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.347	0.200	--	1.72	0.989	--		1
Chloromethane	0.619	0.200	--	1.28	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	139	5.00	--	262	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	13.2	1.00	--	31.4	2.38	--		1
Trichlorofluoromethane	0.577	0.200	--	3.24	1.12	--		1
Isopropanol	96.7	0.500	--	238	1.23	--		1
Tertiary butyl Alcohol	0.707	0.500	--	2.14	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.515	0.500	--	1.52	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-04

Date Collected: 12/19/17 16:16

Client ID: IA-2

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.304	0.200	--	0.971	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.333	0.200	--	1.36	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.463	0.200	--	1.74	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-04

Date Collected: 12/19/17 16:16

Client ID: IA-2

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	81		60-140
Bromochloromethane	86		60-140
chlorobenzene-d5	79		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-04
 Client ID: IA-2
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/27/17 22:59
 Analyst: RY

Date Collected: 12/19/17 16:16
 Date Received: 12/20/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	0.020	0.020	--	0.109	0.109	--		1
Carbon tetrachloride	0.086	0.020	--	0.541	0.126	--		1
Trichloroethene	0.065	0.020	--	0.349	0.107	--		1
Tetrachloroethene	0.077	0.020	--	0.522	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	82		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	80		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-05
 Client ID: IA-8
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Air
 Analytical Method: 48,TO-15
 Analytical Date: 12/27/17 23:31
 Analyst: RY

Date Collected: 12/19/17 16:18
 Date Received: 12/20/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.356	0.200	--	1.76	0.989	--		1
Chloromethane	0.667	0.200	--	1.38	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	256	5.00	--	482	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	11.7	1.00	--	27.8	2.38	--		1
Trichlorofluoromethane	0.303	0.200	--	1.70	1.12	--		1
Isopropanol	10.9	0.500	--	26.8	1.23	--		1
Tertiary butyl Alcohol	0.538	0.500	--	1.63	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.529	0.500	--	1.56	1.47	--		1
Ethyl Acetate	0.801	0.500	--	2.89	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-05

Date Collected: 12/19/17 16:18

Client ID: IA-8

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.294	0.200	--	0.939	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.456	0.200	--	1.72	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-05

Date Collected: 12/19/17 16:18

Client ID: IA-8

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	76		60-140
Bromochloromethane	85		60-140
chlorobenzene-d5	76		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-05
 Client ID: IA-8
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/27/17 23:31
 Analyst: RY

Date Collected: 12/19/17 16:18
 Date Received: 12/20/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.092	0.020	--	0.579	0.126	--		1
Trichloroethene	0.148	0.020	--	0.795	0.107	--		1
Tetrachloroethene	0.084	0.020	--	0.570	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	75		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	77		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-06
 Client ID: IA-3
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Air
 Analytical Method: 48,TO-15
 Analytical Date: 12/28/17 00:36
 Analyst: RY

Date Collected: 12/19/17 16:19
 Date Received: 12/20/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.328	0.200	--	1.62	0.989	--		1
Chloromethane	0.666	0.200	--	1.38	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	254	5.00	--	479	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	11.9	1.00	--	28.3	2.38	--		1
Trichlorofluoromethane	0.272	0.200	--	1.53	1.12	--		1
Isopropanol	10.6	0.500	--	26.1	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.585	0.500	--	1.73	1.47	--		1
Ethyl Acetate	0.737	0.500	--	2.66	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-06

Date Collected: 12/19/17 16:19

Client ID: IA-3

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.284	0.200	--	0.907	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.203	0.200	--	0.832	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.637	0.200	--	2.40	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-06

Date Collected: 12/19/17 16:19

Client ID: IA-3

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	79		60-140
Bromochloromethane	87		60-140
chlorobenzene-d5	79		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-06
 Client ID: IA-3
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/28/17 00:36
 Analyst: RY

Date Collected: 12/19/17 16:19
 Date Received: 12/20/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.090	0.020	--	0.566	0.126	--		1
Trichloroethene	0.142	0.020	--	0.763	0.107	--		1
Tetrachloroethene	0.086	0.020	--	0.583	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	80		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	80		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-07
Client ID: IA-5
Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 12/28/17 01:09
Analyst: RY

Date Collected: 12/19/17 16:22
Date Received: 12/20/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.584	0.200	--	2.89	0.989	--		1
Chloromethane	0.800	0.200	--	1.65	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	140	5.00	--	264	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	9.75	1.00	--	23.2	2.38	--		1
Trichlorofluoromethane	0.265	0.200	--	1.49	1.12	--		1
Isopropanol	11.1	0.500	--	27.3	1.23	--		1
Tertiary butyl Alcohol	0.514	0.500	--	1.56	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.603	0.500	--	1.78	1.47	--		1
Ethyl Acetate	0.572	0.500	--	2.06	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-07

Date Collected: 12/19/17 16:22

Client ID: IA-5

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
n-Hexane	0.234	0.200	--	0.825	0.705	--		1
Benzene	0.314	0.200	--	1.00	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	0.213	0.200	--	0.995	0.934	--		1
Heptane	0.255	0.200	--	1.05	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.516	0.200	--	1.94	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-07

Date Collected: 12/19/17 16:22

Client ID: IA-5

Date Received: 12/20/17

Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	77		60-140
Bromochloromethane	84		60-140
chlorobenzene-d5	80		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**SAMPLE RESULTS**

Lab ID: L1746905-07
 Client ID: IA-5
 Sample Location: 145 MARCUS BLVD, HAUPPAUGE, NY
 Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/28/17 01:09
 Analyst: RY

Date Collected: 12/19/17 16:22
 Date Received: 12/20/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.090	0.020	--	0.566	0.126	--		1
Trichloroethene	0.077	0.020	--	0.414	0.107	--		1
Tetrachloroethene	0.094	0.020	--	0.637	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	77		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	81		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 12/27/17 15:21

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-07 Batch: WG1077046-4								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 12/27/17 15:21

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-07 Batch: WG1077046-4								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1



Project Name: COMPUTER CIRCUITS

Lab Number: L1746905

Project Number: MAR1701

Report Date: 12/28/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 12/27/17 15:21

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-07 Batch: WG1077046-4								
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15-SIM

Analytical Date: 12/27/17 15:21

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 03-07 Batch: WG1077047-4								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1



Project Name: COMPUTER CIRCUITS

Lab Number: L1746905

Project Number: MAR1701

Report Date: 12/28/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15-SIM

Analytical Date: 12/27/17 15:21

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 03-07 Batch: WG1077047-4								
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15-SIM

Analytical Date: 12/27/17 15:21

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 03-07 Batch: WG1077047-4								
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
1,2,3-Trichloropropane	ND	0.020	--	ND	0.121	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17

Method Blank Analysis

Batch Quality Control

Analytical Method: 48,TO-15-SIM

Analytical Date: 12/27/17 15:21

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 03-07 Batch: WG1077047-4								
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG1077046-3								
Chlorodifluoromethane	84		-		70-130	-		
Propylene	87		-		70-130	-		
Propane	74		-		70-130	-		
Dichlorodifluoromethane	93		-		70-130	-		
Chloromethane	96		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	112		-		70-130	-		
Methanol	81		-		70-130	-		
Vinyl chloride	105		-		70-130	-		
1,3-Butadiene	103		-		70-130	-		
Butane	86		-		70-130	-		
Bromomethane	109		-		70-130	-		
Chloroethane	103		-		70-130	-		
Ethyl Alcohol	84		-		70-130	-		
Dichlorofluoromethane	100		-		70-130	-		
Vinyl bromide	107		-		70-130	-		
Acrolein	84		-		70-130	-		
Acetone	107		-		70-130	-		
Acetonitrile	89		-		70-130	-		
Trichlorofluoromethane	126		-		70-130	-		
iso-Propyl Alcohol	102		-		70-130	-		
Acrylonitrile	94		-		70-130	-		
Pentane	90		-		70-130	-		
Ethyl ether	81		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG1077046-3								
1,1-Dichloroethene	108		-		70-130	-		
tert-Butyl Alcohol	91		-		70-130	-		
Methylene chloride	106		-		70-130	-		
3-Chloropropene	94		-		70-130	-		
Carbon disulfide	99		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	114		-		70-130	-		
trans-1,2-Dichloroethene	89		-		70-130	-		
1,1-Dichloroethane	90		-		70-130	-		
Methyl tert butyl ether	90		-		70-130	-		
Vinyl acetate	99		-		70-130	-		
2-Butanone	89		-		70-130	-		
cis-1,2-Dichloroethene	90		-		70-130	-		
Ethyl Acetate	102		-		70-130	-		
Chloroform	110		-		70-130	-		
Tetrahydrofuran	82		-		70-130	-		
2,2-Dichloropropane	95		-		70-130	-		
1,2-Dichloroethane	103		-		70-130	-		
n-Hexane	92		-		70-130	-		
Isopropyl Ether	89		-		70-130	-		
Ethyl-Tert-Butyl-Ether	81		-		70-130	-		
1,1,1-Trichloroethane	102		-		70-130	-		
1,1-Dichloropropene	86		-		70-130	-		
Benzene	92		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG1077046-3								
Carbon tetrachloride	112		-		70-130	-		
Cyclohexane	87		-		70-130	-		
Tertiary-Amyl Methyl Ether	78		-		70-130	-		
Dibromomethane	101		-		70-130	-		
1,2-Dichloropropane	95		-		70-130	-		
Bromodichloromethane	106		-		70-130	-		
1,4-Dioxane	98		-		70-130	-		
Trichloroethene	105		-		70-130	-		
2,2,4-Trimethylpentane	94		-		70-130	-		
Methyl Methacrylate	93		-		70-130	-		
Heptane	85		-		70-130	-		
cis-1,3-Dichloropropene	95		-		70-130	-		
4-Methyl-2-pentanone	91		-		70-130	-		
trans-1,3-Dichloropropene	83		-		70-130	-		
1,1,2-Trichloroethane	105		-		70-130	-		
Toluene	98		-		70-130	-		
1,3-Dichloropropane	93		-		70-130	-		
2-Hexanone	94		-		70-130	-		
Dibromochloromethane	117		-		70-130	-		
1,2-Dibromoethane	107		-		70-130	-		
Butyl Acetate	85		-		70-130	-		
Octane	86		-		70-130	-		
Tetrachloroethene	107		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG1077046-3								
1,1,1,2-Tetrachloroethane	103		-		70-130	-		
Chlorobenzene	106		-		70-130	-		
Ethylbenzene	99		-		70-130	-		
p/m-Xylene	102		-		70-130	-		
Bromoform	118		-		70-130	-		
Styrene	100		-		70-130	-		
1,1,2,2-Tetrachloroethane	111		-		70-130	-		
o-Xylene	105		-		70-130	-		
1,2,3-Trichloropropane	95		-		70-130	-		
Nonane (C9)	84		-		70-130	-		
Isopropylbenzene	98		-		70-130	-		
Bromobenzene	92		-		70-130	-		
o-Chlorotoluene	96		-		70-130	-		
n-Propylbenzene	99		-		70-130	-		
p-Chlorotoluene	94		-		70-130	-		
4-Ethyltoluene	103		-		70-130	-		
1,3,5-Trimethylbenzene	102		-		70-130	-		
tert-Butylbenzene	100		-		70-130	-		
1,2,4-Trimethylbenzene	109		-		70-130	-		
Decane (C10)	90		-		70-130	-		
Benzyl chloride	103		-		70-130	-		
1,3-Dichlorobenzene	111		-		70-130	-		
1,4-Dichlorobenzene	108		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG1077046-3								
sec-Butylbenzene	98		-		70-130	-		
p-Isopropyltoluene	93		-		70-130	-		
1,2-Dichlorobenzene	110		-		70-130	-		
n-Butylbenzene	100		-		70-130	-		
1,2-Dibromo-3-chloropropane	103		-		70-130	-		
Undecane	103		-		70-130	-		
Dodecane (C12)	116		-		70-130	-		
1,2,4-Trichlorobenzene	130		-		70-130	-		
Naphthalene	109		-		70-130	-		
1,2,3-Trichlorobenzene	113		-		70-130	-		
Hexachlorobutadiene	123		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-07 Batch: WG1077047-3								
Propylene	87		-		70-130	-		25
Dichlorodifluoromethane	99		-		70-130	-		25
Chloromethane	88		-		70-130	-		25
1,2-Dichloro-1,1,2,2-tetrafluoroethane	108		-		70-130	-		25
Vinyl chloride	100		-		70-130	-		25
1,3-Butadiene	101		-		70-130	-		25
Bromomethane	112		-		70-130	-		25
Chloroethane	100		-		70-130	-		25
Ethyl Alcohol	81		-		70-130	-		25
Vinyl bromide	107		-		70-130	-		25
Acetone	108		-		70-130	-		25
Trichlorofluoromethane	124		-		70-130	-		25
iso-Propyl Alcohol	107		-		70-130	-		25
Acrylonitrile	93		-		70-130	-		25
1,1-Dichloroethene	106		-		70-130	-		25
tert-Butyl Alcohol ¹	86		-		70-130	-		25
Methylene chloride	106		-		70-130	-		25
3-Chloropropene	98		-		70-130	-		25
Carbon disulfide	96		-		70-130	-		25
1,1,2-Trichloro-1,2,2-Trifluoroethane	113		-		70-130	-		25
Halothane	116		-		70-130	-		25
trans-1,2-Dichloroethene	92		-		70-130	-		25
1,1-Dichloroethane	94		-		70-130	-		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-07 Batch: WG1077047-3								
Methyl tert butyl ether	93		-		70-130	-		25
Vinyl acetate	95		-		70-130	-		25
2-Butanone	89		-		70-130	-		25
cis-1,2-Dichloroethene	90		-		70-130	-		25
Ethyl Acetate	103		-		70-130	-		25
Chloroform	109		-		70-130	-		25
Tetrahydrofuran	79		-		70-130	-		25
1,2-Dichloroethane	104		-		70-130	-		25
n-Hexane	83		-		70-130	-		25
1,1,1-Trichloroethane	105		-		70-130	-		25
Benzene	91		-		70-130	-		25
Carbon tetrachloride	111		-		70-130	-		25
Cyclohexane	82		-		70-130	-		25
Dibromomethane ¹	88		-		70-130	-		25
1,2-Dichloropropane	94		-		70-130	-		25
Bromodichloromethane	105		-		70-130	-		25
1,4-Dioxane	97		-		70-130	-		25
Trichloroethene	99		-		70-130	-		25
2,2,4-Trimethylpentane	91		-		70-130	-		25
cis-1,3-Dichloropropene	92		-		70-130	-		25
4-Methyl-2-pentanone	94		-		70-130	-		25
trans-1,3-Dichloropropene	80		-		70-130	-		25
1,1,2-Trichloroethane	106		-		70-130	-		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-07 Batch: WG1077047-3								
Toluene	96		-		70-130	-		25
2-Hexanone	93		-		70-130	-		25
Dibromochloromethane	118		-		70-130	-		25
1,2-Dibromoethane	107		-		70-130	-		25
Tetrachloroethene	110		-		70-130	-		25
1,1,1,2-Tetrachloroethane	103		-		70-130	-		25
Chlorobenzene	107		-		70-130	-		25
Ethylbenzene	96		-		70-130	-		25
p/m-Xylene	101		-		70-130	-		25
Bromoform	123		-		70-130	-		25
Styrene	98		-		70-130	-		25
1,1,2,2-Tetrachloroethane	111		-		70-130	-		25
o-Xylene	102		-		70-130	-		25
1,2,3-Trichloropropane ¹	99		-		70-130	-		25
Isopropylbenzene	96		-		70-130	-		25
Bromobenzene ¹	93		-		70-130	-		25
4-Ethyltoluene	104		-		70-130	-		25
1,3,5-Trimethylbenzene	104		-		70-130	-		25
1,2,4-Trimethylbenzene	108		-		70-130	-		25
Benzyl chloride	100		-		70-130	-		25
1,3-Dichlorobenzene	118		-		70-130	-		25
1,4-Dichlorobenzene	115		-		70-130	-		25
sec-Butylbenzene	99		-		70-130	-		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-07 Batch: WG1077047-3								
p-Isopropyltoluene	92		-		70-130	-		25
1,2-Dichlorobenzene	115		-		70-130	-		25
n-Butylbenzene	104		-		70-130	-		25
1,2,4-Trichlorobenzene	136	Q	-		70-130	-		25
Naphthalene	115		-		70-130	-		25
1,2,3-Trichlorobenzene	123		-		70-130	-		25
Hexachlorobutadiene	132	Q	-		70-130	-		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1077046-5 QC Sample: L1746905-05 Client ID: IA-8						
Dichlorodifluoromethane	0.356	0.512	ppbV	36	Q	25
Chloromethane	0.667	0.687	ppbV	3		25
Freon-114	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	256	247	ppbV	4		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	11.7	11.5	ppbV	2		25
Trichlorofluoromethane	0.303	0.275	ppbV	10		25
Isopropanol	10.9	10.4	ppbV	5		25
Tertiary butyl Alcohol	0.538	0.507	ppbV	6		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25
2-Butanone	0.529	0.508	ppbV	4		25
Ethyl Acetate	0.801	0.768	ppbV	4		25

Lab Duplicate Analysis Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1077046-5 QC Sample: L1746905-05 Client ID: IA-8						
Chloroform	ND	ND	ppbV	NC		25
Tetrahydrofuran	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	ND	ND	ppbV	NC		25
Benzene	0.294	0.277	ppbV	6		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	ND	0.210	ppbV	NC		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
Toluene	0.456	0.433	ppbV	5		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: COMPUTER CIRCUITS

Project Number: MAR1701

Lab Number: L1746905

Report Date: 12/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1077046-5 QC Sample: L1746905-05 Client ID: IA-8						
p/m-Xylene	ND	ND	ppbV	NC		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	ND	ND	ppbV	NC		25
4-Ethyltoluene	ND	ND	ppbV	NC		25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC		25
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-07 QC Batch ID: WG1077047-5 QC Sample: L1746905-05 Client ID: IA-8						
Vinyl chloride	ND	ND	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Carbon tetrachloride	0.092	0.090	ppbV	2		25
Trichloroethene	0.148	0.147	ppbV	1		25
Tetrachloroethene	0.084	0.080	ppbV	5		25

Project Name: COMPUTER CIRCUITS

Serial_No:12281717:49
Lab Number: L1746905

Project Number: MAR1701

Report Date: 12/28/17

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1746905-01	SVE-SOUTH	0949	Flow 4	12/15/17	254554		-	-	-	Pass	18.0	15.5	15
L1746905-01	SVE-SOUTH	2239	2.7L Can	12/15/17	254554	L1746096-02	Pass	-29.7	-9.8	-	-	-	-
L1746905-02	SVE-NORTH	0101	Flow 2	12/15/17	254554		-	-	-	Pass	17.5	17.9	2
L1746905-03	IA-4	0733	Flow 2	12/15/17	254554		-	-	-	Pass	4.5	5.4	18
L1746905-03	IA-4	195	2.7L Can	12/15/17	254554	L1746096-02	Pass	-29.7	-8.8	-	-	-	-
L1746905-04	IA-2	0088	Flow 4	12/15/17	254554		-	-	-	Pass	4.5	4.6	2
L1746905-04	IA-2	509	2.7L Can	12/15/17	254554	L1746096-02	Pass	-29.7	-7.7	-	-	-	-
L1746905-05	IA-8	0018	Flow 4	12/15/17	254554		-	-	-	Pass	4.5	4.7	4
L1746905-05	IA-8	404	2.7L Can	12/15/17	254554	L1746096-02	Pass	-29.7	-8.4	-	-	-	-
L1746905-06	IA-3	0890	Flow 4	12/15/17	254554		-	-	-	Pass	4.4	4.8	9
L1746905-06	IA-3	2365	2.7L Can	12/15/17	254554	L1746096-03	Pass	-29.5	-7.6	-	-	-	-
L1746905-07	IA-5	0240	Flow 5	12/15/17	254554		-	-	-	Pass	4.5	4.8	6
L1746905-07	IA-5	108	2.7L Can	12/15/17	254554	L1746096-03	Pass	-29.5	-7.5	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1746096
Report Date: 12/28/17

Air Canister Certification Results

Lab ID: L1746096-02
Client ID: CAN 2363 SHELF 7
Sample Location:
Matrix: Air
Analytical Method: 48,TO-15
Analytical Date: 12/14/17 09:07
Analyst: RY

Date Collected: 12/13/17 16:00
Date Received: 12/14/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1746096
Report Date: 12/28/17

Air Canister Certification Results

Lab ID: L1746096-02
Client ID: CAN 2363 SHELF 7
Sample Location:

Date Collected: 12/13/17 16:00
Date Received: 12/14/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L1746096**Project Number:** CANISTER QC BAT**Report Date:** 12/28/17**Air Canister Certification Results**

Lab ID: L1746096-02

Date Collected: 12/13/17 16:00

Client ID: CAN 2363 SHELF 7

Date Received: 12/14/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L1746096**Project Number:** CANISTER QC BAT**Report Date:** 12/28/17**Air Canister Certification Results**

Lab ID: L1746096-02

Date Collected: 12/13/17 16:00

Client ID: CAN 2363 SHELF 7

Date Received: 12/14/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L1746096**Project Number:** CANISTER QC BAT**Report Date:** 12/28/17**Air Canister Certification Results**

Lab ID: L1746096-02

Date Collected: 12/13/17 16:00

Client ID: CAN 2363 SHELF 7

Date Received: 12/14/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	74		60-140
Bromochloromethane	87		60-140
chlorobenzene-d5	75		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1746096
Report Date: 12/28/17

Air Canister Certification Results

Lab ID: L1746096-02
Client ID: CAN 2363 SHELF 7
Sample Location:
Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/14/17 09:07
Analyst: RY

Date Collected: 12/13/17 16:00
Date Received: 12/14/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1746096
Report Date: 12/28/17

Air Canister Certification Results

Lab ID: L1746096-02
Client ID: CAN 2363 SHELF 7
Sample Location:

Date Collected: 12/13/17 16:00
Date Received: 12/14/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L1746096**Project Number:** CANISTER QC BAT**Report Date:** 12/28/17**Air Canister Certification Results**

Lab ID: L1746096-02

Date Collected: 12/13/17 16:00

Client ID: CAN 2363 SHELF 7

Date Received: 12/14/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	74		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	75		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1746096
Report Date: 12/28/17

Air Canister Certification Results

Lab ID: L1746096-03
Client ID: CAN 485 SHELF 8
Sample Location:
Matrix: Air
Analytical Method: 48,TO-15
Analytical Date: 12/14/17 09:41
Analyst: RY

Date Collected: 12/13/17 16:00
Date Received: 12/14/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1746096
Report Date: 12/28/17

Air Canister Certification Results

Lab ID: L1746096-03
Client ID: CAN 485 SHELF 8
Sample Location:

Date Collected: 12/13/17 16:00
Date Received: 12/14/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L1746096**Project Number:** CANISTER QC BAT**Report Date:** 12/28/17**Air Canister Certification Results**

Lab ID: L1746096-03

Date Collected: 12/13/17 16:00

Client ID: CAN 485 SHELF 8

Date Received: 12/14/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L1746096**Project Number:** CANISTER QC BAT**Report Date:** 12/28/17**Air Canister Certification Results**

Lab ID: L1746096-03

Date Collected: 12/13/17 16:00

Client ID: CAN 485 SHELF 8

Date Received: 12/14/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L1746096**Project Number:** CANISTER QC BAT**Report Date:** 12/28/17**Air Canister Certification Results**

Lab ID: L1746096-03

Date Collected: 12/13/17 16:00

Client ID: CAN 485 SHELF 8

Date Received: 12/14/17

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	72		60-140
Bromochloromethane	87		60-140
chlorobenzene-d5	76		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1746096
Report Date: 12/28/17

Air Canister Certification Results

Lab ID: L1746096-03
Client ID: CAN 485 SHELF 8
Sample Location:
Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/14/17 09:41
Analyst: RY

Date Collected: 12/13/17 16:00
Date Received: 12/14/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1746096
Report Date: 12/28/17

Air Canister Certification Results

Lab ID: L1746096-03
Client ID: CAN 485 SHELF 8
Sample Location:

Date Collected: 12/13/17 16:00
Date Received: 12/14/17
Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1746096
Report Date: 12/28/17

Air Canister Certification Results

Lab ID: L1746096-03
 Client ID: CAN 485 SHELF 8
 Sample Location:

Date Collected: 12/13/17 16:00
 Date Received: 12/14/17
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	74		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	75		60-140



Project Name: COMPUTER CIRCUITS**Lab Number:** L1746905**Project Number:** MAR1701**Report Date:** 12/28/17**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information**Cooler** **Custody Seal**

NA Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1746905-01A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)
L1746905-02A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)
L1746905-03A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L1746905-04A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L1746905-05A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L1746905-06A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L1746905-07A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)

Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1746905
Report Date: 12/28/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report



Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1746905
Report Date: 12/28/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: COMPUTER CIRCUITS
Project Number: MAR1701

Lab Number: L1746905
Report Date: 12/28/17

REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 10

Department: **Quality Assurance**

Published Date: 1/16/2017 11:00:05 AM

Title: **Certificate/Approval Program Summary**

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 300:** DW: Bromide**EPA 6860:** NPW and SCM: Perchlorate**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation**EPA 9012B:** NPW: Total Cyanide**EPA 9050A:** NPW: Specific Conductance**SM3500:** NPW: Ferrous Iron**SM4500:** NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.**SM5310C:** DW: Dissolved Organic Carbon**Mansfield Facility****SM 2540D:** TSS**EPA 3005A** NPW**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

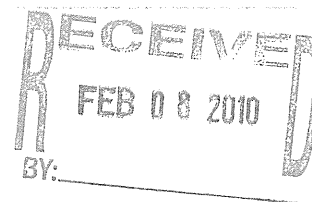
Westborough Facility:**Drinking Water****EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.****EPA 624:** Volatile Halocarbons & Aromatics,**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.****Mansfield Facility:****Drinking Water****EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

APPENDIX D

DRAFT INSTITUTIONAL CONTROLS

JAMES P. RIGANO
PARTNER
TELEPHONE 631.979.3000
jrigano@certilmanbalin.com



February 4, 2010

Removal Action Branch (3 copies)
Response and Prevention Branch
U.S. Environmental Protection Agency
2890 Woodbridge Ave., Bldg. 209 (MS-211)
Edison, NJ 08837
Attn: Computer Circuits Superfund Site,
On-Scene Coordinator

U.S. Environmental Protection Agency (3 copies)
NY Remediation Branch
Emergency & Remedial Response Div.
290 Broadway, 20th Floor
New York, NY 10007-1866
Attn: Computer Circuits Site,
Remedial Project Manager

Chief, NY/Caribbean Superfund Branch (1 copy)
Office of Regional Counsel
US Environmental Protection Agency
290 Broadway, 17th Floor
New York, NY 10007-1866
Attn: Henry Guzman, Computer Circuits
Superfund Site, Site Attorney

Hazardous Waste Remediation Bureau (2 copies)
NY State Dept. of Environmental Conservation
625 Broadway
Albany, NY 12233-7010
Attn: Computer Circuits Superfund
Site Project Manager

Re: Computer Circuits Superfund Site
Hauppauge, New York
Draft Declaration of Covenants and Restrictions

Dear Madam or Sir:

Enclosed please find a draft of the Declaration of Covenants and Restrictions.

Very truly yours,

James P. Rigano

JPR/kad
Enclosures
cc: K. Almskog (w/enc.) ✓

D R A F T

DECLARATION of COVENANTS and RESTRICTIONS

THIS COVENANT, made the ____ day of _____, 2010, by 145 Marcus Blvd., Inc, a corporation organized existing under the laws of the State of New York and having an office for the transaction of business at 79 Village Hill Drive, Dix Hills, New York 11746.

WHEREAS, 145 Marcus Blvd., Inc. is the subject of an Administrative Order For Remedial Action issued by the U.S. Environmental Protection Agency (EPA) to 145 Marcus Blvd., Inc. under Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, for that real property located at 145 Marcus Boulevard, Hauppauge in the Town of Smithtown, County of Suffolk, State of New York, which consists of one parcel conveyed as follows: (1) by MCS realty Co. to 145 Marcus Blvd., Inc. by deed dated October 31, 1991 and filed in the Suffolk County Clerk's Office on November 26, 1991 at Liber # 11376, Page # 0177 also known as District 0800, Section 185.00, Block 01.00, and Lot 009; and the property being more particularly described in Appendix "A", attached to this declaration and made a part hereof, and hereinafter referred to as "the Property"; and

WHEREAS, the EPA requires that the Property be subject to restrictive covenants.

NOW, THEREFORE, 145 Marcus Blvd., Inc. for itself and its successors and/or assigns, covenants that:

First, the Property subject to this Declaration of Covenants and Restrictions consists of the property described in Appendix A.

Second, the owner of the Property shall restrict the use of the groundwater underlying the Property without treatment rendering it safe for drinking water unless the user first obtains permission to do so from the EPA or if the EPA shall no longer exist, any government agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens, hereinafter referred to as "the Relevant Agency".

Third, the owner of the Property shall restrict new construction outside the existing building, or, if inside the existing building, then if it will cause disruption of the slab or impact the remediation or monitoring systems, unless the potential for vapor intrusion is evaluated and, if necessary, mitigated.

Fourth, the owner of the Property shall restrict use of the Property to commercial or industrial uses.

Fifth, the owner of the Property hereby grants access rights to EPA or EPA's designated agent for the purpose of ensuring compliance with the Administrative Order.

Sixth, this Declaration is and shall be deemed a covenant that shall run with the land and shall be binding up on all future owners of the Property, and shall provide that the owner, and its successors and assigns, consents to enforcement by the Relevant Agency of the prohibitions and restrictions of the Administrative Order and hereby covenants not to contest the authority of the Relevant Agency to seek enforcement.

Seventh, any deed of conveyance of the Property, or any portion thereof, shall recite, unless the Relevant Agency has consented to the termination of such covenants and restrictions, that said conveyance is subject to this Declaration of Covenants and Restrictions.

IN WITNESS WHEREOF, the undersigned has executed this instrument the day written below

145 Marcus Blvd., Inc.

By: _____
Name:

STATE OF NEW YORK)
)SS:
COUNTY OF SUFFOLK)

On the ____ day of _____, in the year ____, before me, the undersigned, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individuals whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their capacities, and that by his signatures on the instrument, the individuals, or the persons upon behalf of which the individuals acted, executed the instrument.

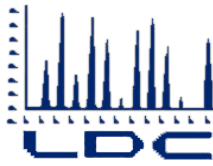
Notary Public

APPENDIX A

BEGINNING at a point on the easterly side of Marcus Blvd. distant 627.45 feet northerly from the northerly end of the curve connecting the easterly side of Marcus Blvd. with the northerly side of Kennedy Drive; running thence North 3 degrees 17 minutes 15 seconds West 311.14 feet along the easterly side of Marcus Blvd.; running thence North 86 degrees 42 minutes 45 seconds East 350.00 feet; running thence South 3 degrees 17 minutes 15 seconds East, 311.14 feet; running thence South 86 degrees 42 minutes 45 seconds West, 350.00 feet to the easterly side of Marcus Blvd. at the point or place of BEGINNING. Said premises are also known and described as 145 Marcus Boulevard, Hauppauge, New York 11788.

APPENDIX E

DATA VALIDATION REPORT



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

P.W. Grosser Consulting
630 Johnson Ave, Suite 7
Bohemia, NY 11716
ATTN: Ms. Heather Morain-Botta

February 28, 2018

SUBJECT: MAR1601 - Former Computer Circuits, Data Validation Report

Dear Ms. Morain-Botta,

Enclosed are the final data validation reports for the fraction listed below. These SDGs were received on January 30, 2018. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #40330:

<u>SDG #</u>	<u>Fraction</u>
L1726012	Volatiles
L1726929	
L1746905	

The data validation was performed under Category B validation guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- USEPA Region 2 Analysis of Volatile Organic Compounds in Air Contained Canisters, SOP HW-31, Revision 6, June 2014
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002, January 2017

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink
Project Manager/Senior Chemist

Shaded cells indicate Tier 3 validation (all other cells are Tier 2 validation). These sample counts do not include MS, MSD, or DUP's.

Former Computer Circuits Site, NYSDEC

Site: Former Computer Circuits Site
Laboratory: Alpha Analytical, Inc.
Report No.: L1726012
Reviewer: Pei Geng and Christina Rink/Laboratory Data Consultants for P.W.
Grosser Consulting
Date: February 28, 2018

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
SVE-NORTH (INF)	L1726012-02	VOA
IA-4	L1726012-03	VOA
IA-2	L1726012-04	VOA
IA-8	L1726012-05	VOA
IA-3	L1726012-06	VOA
IA-5	L1726012-07	VOA
IA-4DUP	L1726012-03DUP	VOA

Associated QC Samples(s):

Field/Trip Blanks: None Associated

Field Duplicate pair: None Associated

The above-listed air samples were collected on July 26, 2017 and were analyzed for volatile organic compounds (VOCs) by method TO-15 and method TO-15 in selected ion monitoring (SIM) mode. The data validation was performed in accordance with the USEPA Region 2 *Analysis of Volatile Organic Compounds in Air Contained Canisters*, SOP HW-31, Revision 6 (June 2014) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

All criteria were met.

Blanks

Contamination was not detected in the method blanks.

Former Computer Circuits Site, NYSDEC

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not required.

Laboratory Duplicate Results

Laboratory duplicate analysis was performed on sample IA-4 for VOC analyses. All criteria were met.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Quantitation Limits and Data Assessment

No results were reported below the reporting limit (RL) and above the minimum detection limit (MDL) in the VOC analyses.

Dilutions were not required for VOC analyses.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.
- JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-02
 Client ID : SVE-NORTH (INF)
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : SOIL_VAPOR
 Analytical Method : 48,TO-15
 Lab File ID : R248832
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 09:30
 Date Received : 07/27/17
 Date Analyzed : 07/30/17 02:37
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.335	0.200	--	1.66	0.989	--	
74-87-3	Chloromethane	0.296	0.200	--	0.611	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
75-01-4	Vinyl chloride	ND	0.200	--	ND	0.511	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	6.65	5.00	--	12.5	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	5.07	1.00	--	12.0	2.38	--	
75-69-4	Trichlorofluoromethane	0.332	0.200	--	1.87	1.12	--	
67-63-0	Isopropanol	10.1	0.500	--	24.8	1.23	--	
75-35-4	1,1-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-65-0	Tertiary butyl Alcohol	1.22	0.500	--	3.70	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	0.557	0.200	--	4.27	1.53	--	
156-60-5	trans-1,2-Dichloroethene	0.351	0.200	--	1.39	0.793	--	
75-34-3	1,1-Dichloroethane	0.534	0.200	--	2.16	0.809	--	
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
156-59-2	cis-1,2-Dichloroethene	1.79	0.200	--	7.10	0.793	--	
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	0.228	0.200	--	1.11	0.977	--	
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U

FEB 28 2018



Initials: CR

Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : MAR1601
Lab ID : L1726012-02
Client ID : SVE-NORTH (INF)
Sample Location : 145 MARCUS BLVD
Sample Matrix : SOIL_VAPOR
Analytical Method : 48,TO-15
Lab File ID : R248832
Sample Amount : 250 ml

Lab Number : L1726012
Project Number : MAR1601
Date Collected : 07/26/17 09:30
Date Received : 07/27/17
Date Analyzed : 07/30/17 02:37
Dilution Factor : 1
Analyst : MB
Instrument ID : AIRPIANO2
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
71-55-6	1,1,1-Trichloroethane	0.884	0.200	--	4.82	1.09	--	
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
56-23-5	Carbon tetrachloride	ND	0.200	--	ND	1.26	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	0.315	0.200	--	1.14	0.721	--	
79-01-6	Trichloroethene	17.7	0.200	--	95.1	1.07	--	
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	ND	0.200	--	ND	0.754	--	U
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
127-18-4	Tetrachloroethene	1.11	0.200	--	7.53	1.36	--	
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U

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Initials: CR

Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-02
 Client ID : SVE-NORTH (INF)
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : SOIL_VAPOR
 Analytical Method : 48,TO-15
 Lab File ID : R248832
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 09:30
 Date Received : 07/27/17
 Date Analyzed : 07/30/17 02:37
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Initials: *CR*



Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : MAR1601
Lab ID : L1726012-03
Client ID : IA-4
Sample Location : 145 MARCUS BLVD
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R248821
Sample Amount : 250 ml

Lab Number : L1726012
Project Number : MAR1601
Date Collected : 07/26/17 16:05
Date Received : 07/27/17
Date Analyzed : 07/29/17 20:10
Dilution Factor : 1
Analyst : MB
Instrument ID : AIRPIANO2
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.336	0.200	--	1.66	0.989	--	
74-87-3	Chloromethane	0.704	0.200	--	1.45	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	42.0	5.00	--	79.1	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	13.4	1.00	--	31.8	2.38	--	
75-69-4	Trichlorofluoromethane	0.255	0.200	--	1.43	1.12	--	
67-63-0	Isopropanol	18.7	0.500	--	46.0	1.23	--	
75-65-0	Tertiary butyl Alcohol	0.701	0.500	--	2.13	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	0.510	0.500	--	1.50	1.47	--	
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : MAR1601
Lab ID : L1726012-03
Client ID : IA-4
Sample Location : 145 MARCUS BLVD
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R248821
Sample Amount : 250 ml

Lab Number : L1726012
Project Number : MAR1601
Date Collected : 07/26/17 16:05
Date Received : 07/27/17
Date Analyzed : 07/29/17 20:10
Dilution Factor : 1
Analyst : MB
Instrument ID : AIRPIANO2
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	0.962	0.200	--	3.94	0.820	--	
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.358	0.200	--	1.35	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

FEB 28 2018

Initials: CR



Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : MAR1601
Lab ID : L1726012-04
Client ID : IA-2
Sample Location : 145 MARCUS BLVD
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R248823
Sample Amount : 250 ml

Lab Number : L1726012
Project Number : MAR1601
Date Collected : 07/26/17 16:10
Date Received : 07/27/17
Date Analyzed : 07/29/17 21:21
Dilution Factor : 1
Analyst : MB
Instrument ID : AIRPIANO2
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.318	0.200	--	1.57	0.989	--	
74-87-3	Chloromethane	0.658	0.200	--	1.36	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	35.6	5.00	--	67.1	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	11.3	1.00	--	26.8	2.38	--	
75-69-4	Trichlorofluoromethane	0.327	0.200	--	1.84	1.12	--	
67-63-0	Isopropanol	26.0	0.500	--	63.9	1.23	--	
75-65-0	Tertiary butyl Alcohol	0.633	0.500	--	1.92	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	0.578	0.500	--	1.70	1.47	--	
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : MAR1601
Lab ID : L1726012-04
Client ID : IA-2
Sample Location : 145 MARCUS BLVD
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R248823
Sample Amount : 250 ml

Lab Number : L1726012
Project Number : MAR1601
Date Collected : 07/26/17 16:10
Date Received : 07/27/17
Date Analyzed : 07/29/17 21:21
Dilution Factor : 1
Analyst : MB
Instrument ID : AIRPIANO2
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	0.320	0.200	--	1.31	0.820	--	
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.417	0.200	--	1.57	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	0.229	0.200	--	0.975	0.852	--	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : MAR1601
Lab ID : L1726012-05
Client ID : IA-8
Sample Location : 145 MARCUS BLVD
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R248824
Sample Amount : 250 ml

Lab Number : L1726012
Project Number : MAR1601
Date Collected : 07/26/17 16:25
Date Received : 07/27/17
Date Analyzed : 07/29/17 21:57
Dilution Factor : 1
Analyst : MB
Instrument ID : AIRPIANO2
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.350	0.200	--	1.73	0.989	--	
74-87-3	Chloromethane	0.781	0.200	--	1.61	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	80.2	5.00	--	151	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	13.7	1.00	--	32.5	2.38	--	
75-69-4	Trichlorofluoromethane	0.206	0.200	--	1.16	1.12	--	
67-63-0	Isopropanol	5.49	0.500	--	13.5	1.23	--	
75-65-0	Tertiary butyl Alcohol	0.614	0.500	--	1.86	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	0.593	0.500	--	1.75	1.47	--	
141-78-6	Ethyl Acetate	0.748	0.500	--	2.70	1.80	--	
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : MAR1601
Lab ID : L1726012-05
Client ID : IA-8
Sample Location : 145 MARCUS BLVD
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R248824
Sample Amount : 250 ml

Lab Number : L1726012
Project Number : MAR1601
Date Collected : 07/26/17 16:25
Date Received : 07/27/17
Date Analyzed : 07/29/17 21:57
Dilution Factor : 1
Analyst : MB
Instrument ID : AIRPIANO2
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.465	0.200	--	1.75	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Initials: CR

Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-06
 Client ID : IA-3
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : AIR
 Analytical Method : 48,TO-15
 Lab File ID : R248825
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 16:20
 Date Received : 07/27/17
 Date Analyzed : 07/29/17 22:32
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.292	0.200	--	1.44	0.989	--	
74-87-3	Chloromethane	0.732	0.200	--	1.51	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	83.4	5.00	--	157	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	14.4	1.00	--	34.2	2.38	--	
75-69-4	Trichlorofluoromethane	0.246	0.200	--	1.38	1.12	--	
67-63-0	Isopropanol	5.54	0.500	--	13.6	1.23	--	
75-65-0	Tertiary butyl Alcohol	0.605	0.500	--	1.83	1.52	--	
75-09-2	Methylene chloride	0.664	0.500	--	2.31	1.74	--	
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	0.616	0.500	--	1.82	1.47	--	
141-78-6	Ethyl Acetate	0.741	0.500	--	2.67	1.80	--	
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

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Initials: CR

Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-06
 Client ID : IA-3
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : AIR
 Analytical Method : 48,TO-15
 Lab File ID : R248825
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 16:20
 Date Received : 07/27/17
 Date Analyzed : 07/29/17 22:32
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.742	0.200	--	2.80	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-07
 Client ID : IA-5
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : AIR
 Analytical Method : 48,TO-15
 Lab File ID : R248826
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 16:15
 Date Received : 07/27/17
 Date Analyzed : 07/29/17 23:07
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.337	0.200	--	1.67	0.989	--	
74-87-3	Chloromethane	0.714	0.200	--	1.47	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	36.4	5.00	--	68.6	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	10.8	1.00	--	25.7	2.38	--	
75-69-4	Trichlorofluoromethane	0.218	0.200	--	1.23	1.12	--	
67-63-0	Isopropanol	3.06	0.500	--	7.52	1.23	--	
75-65-0	Tertiary butyl Alcohol	0.547	0.500	--	1.66	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
141-78-6	Ethyl Acetate	0.595	0.500	--	2.14	1.80	--	
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

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Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-07
 Client ID : IA-5
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : AIR
 Analytical Method : 48,TO-15
 Lab File ID : R248826
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 16:15
 Date Received : 07/27/17
 Date Analyzed : 07/29/17 23:07
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.361	0.200	--	1.36	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-03
 Client ID : IA-4
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : AIR
 Analytical Method : 48,TO-15-SIM
 Lab File ID : R248821
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 16:05
 Date Received : 07/27/17
 Date Analyzed : 07/29/17 20:10
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
56-23-5	Carbon tetrachloride	0.076	0.020	--	0.478	0.126	--	
79-01-6	Trichloroethene	ND	0.020	--	ND	0.107	--	U U
127-18-4	Tetrachloroethene	ND	0.020	--	ND	0.136	--	U U

FEB 28 2018

Initials: CR



Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-04
 Client ID : IA-2
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : AIR
 Analytical Method : 48,TO-15-SIM
 Lab File ID : R248823
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 16:10
 Date Received : 07/27/17
 Date Analyzed : 07/29/17 21:21
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	0.024	0.020	--	0.131	0.109	--	
56-23-5	Carbon tetrachloride	0.075	0.020	--	0.472	0.126	--	
79-01-6	Trichloroethene	0.032	0.020	--	0.172	0.107	--	
127-18-4	Tetrachloroethene	ND	0.020	--	ND	0.136	--	U U

FEB 28 2018

Initials: CR



Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-05
 Client ID : IA-8
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : AIR
 Analytical Method : 48,TO-15-SIM
 Lab File ID : R248824
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 16:25
 Date Received : 07/27/17
 Date Analyzed : 07/29/17 21:57
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U ✓
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U ↓
56-23-5	Carbon tetrachloride	0.077	0.020	--	0.484	0.126	--	
79-01-6	Trichloroethene	0.108	0.020	--	0.580	0.107	--	
127-18-4	Tetrachloroethene	0.031	0.020	--	0.210	0.136	--	

FEB 28 2018

Initials: CR



Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-06
 Client ID : IA-3
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : AIR
 Analytical Method : 48,TO-15-SIM
 Lab File ID : R248825
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 16:20
 Date Received : 07/27/17
 Date Analyzed : 07/29/17 22:32
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
56-23-5	Carbon tetrachloride	0.078	0.020	--	0.491	0.126	--	
79-01-6	Trichloroethene	0.114	0.020	--	0.613	0.107	--	
127-18-4	Tetrachloroethene	0.062	0.020	--	0.420	0.136	--	

FEB 28 2018

Initials: *CR*



Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : MAR1601
 Lab ID : L1726012-07
 Client ID : IA-5
 Sample Location : 145 MARCUS BLVD
 Sample Matrix : AIR
 Analytical Method : 48,TO-15-SIM
 Lab File ID : R248826
 Sample Amount : 250 ml

Lab Number : L1726012
 Project Number : MAR1601
 Date Collected : 07/26/17 16:15
 Date Received : 07/27/17
 Date Analyzed : 07/29/17 23:07
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO2
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
56-23-5	Carbon tetrachloride	0.077	0.020	--	0.484	0.126	--	
79-01-6	Trichloroethene	0.033	0.020	--	0.177	0.107	--	
127-18-4	Tetrachloroethene	0.048	0.020	--	0.325	0.136	--	

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Initials: CR



LDC #: 40330A48a **VALIDATION COMPLETENESS WORKSHEET**
 SDG #: L1726012 Category B
 Laboratory: Alpha Analytical, Inc.

Date: 7/18
 Page: 1 of 1
 Reviewer:
 2nd Reviewer:

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 30%. 1 CV = 30%
IV.	Continuing calibration	A	CV ≤ 30%
V.	Laboratory Blanks/Canister Blanks	A/A	by batch
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates /dup	N/A	
IX.	Laboratory control samples	A	LC9
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	SVE-SOUTH (INF)	L1726012-01	Air	07/26/17
2	SVE-NORTH (INF)	L1726012-02	Air	07/26/17
3	IA-4	L1726012-03	Air	07/26/17
4	IA-2	L1726012-04	Air	07/26/17
5	IA-8	L1726012-05	Air	07/26/17
6	IA-3	L1726012-06	Air	07/26/17
7	IA-5	L1726012-07	Air	07/26/17
8	IA-4DUP	L1726012-03DUP	Air	07/26/17
9				
10				

Notes:

Method: Volatiles (EPA Method TO-15)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was canister pressure criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 24 hour clock criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) \leq 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after every ICAL for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) \leq 30% or percent recoveries (%R) 70-130%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 24 hours for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) \leq 30% or percent recoveries (%R) 70-130%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory Blanks/Canister Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed at least once every 24 hours for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Was a canister blank analyzed for every canister?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the canister blanks? If yes, please see the Canister Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Field Blanks				
Were field blanks identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Surrogate spikes (Optional)				
Were all surrogate percent recoveries (%R) within QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VIII. Laboratory Duplicate				
Was a laboratory duplicate analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the relative percent differences (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per analytical batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
XI. Internal standards				
Were internal standard area counts within $\pm 40\%$ from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within ± 20.0 seconds from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method TO-15)

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

Page: 1 of 1
 Reviewer: 9
 2nd Reviewer:

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of compound,

C_x = Concentration of compound,

S = Standard deviation of the RRFs

X = Mean of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (10 std)	RRF (10 std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	ICAL	7/10/17	Acetone (1st internal standard)	1.183	1.183	1.3207	1.3207	22.21	22.22
			Benzene (2nd internal standard)	1.044	1.044	1.0586	1.0586	7.19	7.20
			Ethylbenzene (3rd internal standard)	6.330	6.330	6.3241	6.3241	3.35	3.35
2			Acetone (1st internal standard)						
			Benzene (2nd internal standard)						
			Ethylbenzene (3rd internal standard)						
3			Acetone (1st internal standard)						
			Benzene (2nd internal standard)						
			Ethylbenzene (3rd internal standard)						
4			Acetone (1st internal standard)						
			Benzene (2nd internal standard)						
			Ethylbenzene (3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS VOA (EPA TO-15)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$$

Where: ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

A_x = Area of compound,

C_x = Concentration of compound,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF (CC)	RRF (CC)	%D	%D
1	R248811	7/29/17	Acetone (1st internal standard)	1.3207	1.319	1.319	0.2	0.1
			Benzene (2nd internal standard)	1.0586	1.153	1.153	8.9	8.9
			Ethylbenzene (3rd internal standard)	6.3241	6.013	6.013	4.9	4.9
2			Acetone (1st internal standard)					
			Benzene (2nd internal standard)					
			Ethylbenzene (3rd internal standard)					
3			Acetone (1st internal standard)					
			Benzene (2nd internal standard)					
			Ethylbenzene (3rd internal standard)					
4			Acetone (1st internal standard)					
			Benzene (2nd internal standard)					
			Ethylbenzene (3rd internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 40330A48b

VALIDATION COMPLETENESS WORKSHEET

SDG #: L1726012

Category B

Laboratory: Alpha Analytical, Inc.

Date: 7/9/18

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA Method TO-15-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSO ≤ 20% . 12/1 ≤ 30%
IV.	Continuing calibration	A	COV ≤ 30%
V.	Laboratory Blanks/Canister Blanks	A/A	by batch
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates / Out	N/A	
IX.	Laboratory control samples	A	LCs
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	SVE SOUTH (INF)	L1726012-01	Air	07/26/17
2	IA-4	L1726012-03	Air	07/26/17
3	IA-2	L1726012-04	Air	07/26/17
4	IA-8	L1726012-05	Air	07/26/17
5	IA-3	L1726012-06	Air	07/26/17
6	IA-5	L1726012-07	Air	07/26/17
7	IA-4DUP	L1726012-03DUP	Air	07/26/17
8				
9				
10				

Notes:

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method TO-15)

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

Method: Volatiles (EPA Method TO-15)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was canister pressure criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 24 hour clock criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after every ICAL for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 30% or percent recoveries (%R) 70-130%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 24 hours for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 30% or percent recoveries (%R) 70-130%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory Blanks/Canister Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed at least once every 24 hours for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Was a canister blank analyzed for every canister?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the canister blanks? If yes, please see the Canister Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Field Blanks				
Were field blanks identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Surrogate spikes (Optional)				
Were all surrogate percent recoveries (%R) within QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VIII. Laboratory Duplicate				
Was a laboratory duplicate analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the relative percent differences (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

LDC #: 40330A486

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: [Signature]
2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per analytical batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		/		
Were target compounds detected in the field duplicates?		/	/	
XI. Internal standards				
Were internal standard area counts within $\pm 40\%$ from the associated calibration standard?	/			
Were retention times within ± 20.0 seconds from the associated calibration standard?	/			
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and RLs adjusted to reflect all sample dilutions applicable to level IV validation?	/			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of compound,

C_x = Concentration of compound,

S = Standard deviation of the RRFs

X = Mean of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (1.0 std)	RRF (1.0 std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	ICAL	7/10/17	Vinyl chloride (1st internal standard)	0.901	0.901	0.8729	0.8729	6.84	6.85
			Trichloroethene (2nd internal standard)	0.433	0.433	0.4459	0.4459	8.24	8.25
			Tetrachloroethene (3rd internal standard)	2.179	2.179	2.4020	2.4020	17.30	17.30
2			Vinyl chloride (1st internal standard)						
			Benzene (2nd internal standard)						
			Tetrachloroethene (3rd internal standard)						
3			Vinyl chloride (1st internal standard)						
			Benzene (2nd internal standard)						
			Tetrachloroethene (3rd internal standard)						
4			Vinyl chloride (1st internal standard)						
			Benzene (2nd internal standard)						
			Tetrachloroethene (3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 6 of 1
 Reviewer: PS
 2nd Reviewer: [Signature]

METHOD: GC/MS VOA (EPA TO-15)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$$

Where: ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

A_x = Area of compound,

C_x = Concentration of compound,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF (CC)	RRF (CC)	%D	%D
1	R248813	7/29/17	Vinyl chloride (1st internal standard)	0.8729	0.937	0.937	7.3	7.3
			Benzene (2nd internal standard)	0.4459	0.441	0.441	1.1	1.0
			Tetrachloroethene (3rd internal standard)	2.4020	2.238	2.238	6.8	6.8
2			Vinyl chloride (1st internal standard)					
			Benzene (2nd internal standard)					
			Tetrachloroethene (3rd internal standard)					
3			Vinyl chloride (1st internal standard)					
			Benzene (2nd internal standard)					
			Tetrachloroethene (3rd internal standard)					
4			Vinyl chloride (1st internal standard)					
			Benzene (2nd internal standard)					
			Tetrachloroethene (3rd internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

METHOD: GC/MS VOA (EPA Method TO-15)

Y	N	N/A
Y	N	N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_s)(I_s)(DF)}{(A_k)(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added, in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 23, 2:

$$\begin{aligned} \text{Conc.} &= \frac{(45') (10.00') ()}{(3157') (0.4459') () ()} \\ &= 0.03203 \text{ ppbv} \times \frac{13'}{2447} \\ &= 0.172 \text{ ppbv} \end{aligned}$$

[illegible]

Former Computer Circuits Site, NYSDEC

Site: Former Computer Circuits Site
Laboratory: Alpha Analytical, Inc.
Report No.: L1726929
Reviewer: Pei Geng and Christina Rink/Laboratory Data Consultants for P.W.
Grosser Consulting
Date: February 28, 2018

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
SVE-SOUTH (INF)	L1726929-01	VOA

Associated QC Samples(s):

Field/Trip Blanks: None Associated

Field Duplicate pair: None Associated

The above-listed air sample was collected on August 2, 2017 and was analyzed for volatile organic compounds (VOCs) by method TO-15. The data validation was performed in accordance with the USEPA Region 2 *Analysis of Volatile Organic Compounds in Air Contained Canisters*, SOP HW-31, Revision 6 (June 2014) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Former Computer Circuits Site, NYSDEC

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

All criteria were met.

Blanks

Contamination was not detected in the method blanks.

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not required.

Laboratory Duplicate Results

A laboratory duplicate as not associated with the sample set. Validation was not required on this basis.

Former Computer Circuits Site, NYSDEC

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Quantitation Limits and Data Assessment

No results were reported below the reporting limit (RL) and above the minimum detection limit (MDL) in the VOC analyses.

Dilutions were not required for VOC analyses.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.
- JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1726929-01
Client ID : SVE-SOUTH (INF)
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : SOIL_VAPOR
Analytical Method : 48,TO-15
Lab File ID : R153829
Sample Amount : 250 ml

Lab Number : L1726929
Project Number : MAR1701
Date Collected : 08/02/17 13:30
Date Received : 08/03/17
Date Analyzed : 08/07/17 18:49
Dilution Factor : 1
Analyst : MB
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.346	0.200	--	1.71	0.989	--	
74-87-3	Chloromethane	0.603	0.200	--	1.25	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
75-01-4	Vinyl chloride	ND	0.200	--	ND	0.511	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	23.5	5.00	--	44.3	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	60.7	1.00	--	144	2.38	--	
75-69-4	Trichlorofluoromethane	0.232	0.200	--	1.30	1.12	--	
67-63-0	Isopropanol	4.34	0.500	--	10.7	1.23	--	
75-35-4	1,1-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-65-0	Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--	U
75-09-2	Methylene chloride	0.676	0.500	--	2.35	1.74	--	
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	11.3	0.500	--	33.3	1.47	--	
156-59-2	cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U

FEB 28 2018



Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1726929-01
Client ID : SVE-SOUTH (INF)
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : SOIL_VAPOR
Analytical Method : 48,TO-15
Lab File ID : R153829
Sample Amount : 250 ml

Lab Number : L1726929
Project Number : MAR1701
Date Collected : 08/02/17 13:30
Date Received : 08/03/17
Date Analyzed : 08/07/17 18:49
Dilution Factor : 1
Analyst : MB
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
71-55-6	1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--	U U
71-43-2	Benzene	0.288	0.200	--	0.920	0.639	--	
56-23-5	Carbon tetrachloride	ND	0.200	--	ND	1.26	--	U U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
79-01-6	Trichloroethene	2.96	0.200	--	15.9	1.07	--	
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	0.831	0.500	--	3.41	2.05	--	
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U U
108-88-3	Toluene	0.347	0.200	--	1.31	0.754	--	
591-78-6	2-Hexanone	5.00	0.200	--	20.5	0.820	--	
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U U
127-18-4	Tetrachloroethene	0.571	0.200	--	3.87	1.36	--	
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U

FEB 28 2018



Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : COMPUTER CIRCUITS
 Lab ID : L1726929-01
 Client ID : SVE-SOUTH (INF)
 Sample Location : 145 MARCUS BLVD, HAUPPAUG
 Sample Matrix : SOIL_VAPOR
 Analytical Method : 48,TO-15
 Lab File ID : R153829
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 Date Analyzed : 08/07/17 18:49
 Dilution Factor : 1
 Analyst : MB
 Instrument ID : AIRPIANO1
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

FEB 28 2018

Initials: CR



LDC #: 40330B48a **VALIDATION COMPLETENESS WORKSHEET**
 SDG #: L1726929 Category B
 Laboratory: Alpha Analytical, Inc.

Date: 3/7/18
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSO ≤ 30% . 1CV ≤ 30%
IV.	Continuing calibration	A	
V.	Laboratory Blanks/Canister Blanks	A/A	by batch
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LES
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	SVE-SOUTH (INF)	L1726929-01	Air	08/02/17
2				
3				
4				
5				
6				
7				
8				

Notes:

Method: Volatiles (EPA Method TO-15)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was canister pressure criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 24 hour clock criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) \leq 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after every ICAL for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) \leq 30% or percent recoveries (%R) 70-130%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 24 hours for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) \leq 30% or percent recoveries (%R) 70-130%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory Blanks/Canister Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed at least once every 24 hours for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Was a canister blank analyzed for every canister?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the canister blanks? If yes, please see the Canister Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Field Blanks				
Were field blanks identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Surrogate spikes (Optional)				
Were all surrogate percent recoveries (%R) within QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VIII. Laboratory Duplicate				
Was a laboratory duplicate analyzed for this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

LDC #: 40320B48a

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: g
2nd Reviewer: c

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per analytical batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
XI. Internal standards				
Were internal standard area counts within $\pm 40\%$ from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within ± 20.0 seconds from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method TO-15)

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of compound,

C_x = Concentration of compound,

S = Standard deviation of the RRFs

X = Mean of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (10 std)	RRF (10 std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	ICAL	7/12/17	Acetone (1st internal standard)	0.838	0.838	0.8850	0.8850	19.30	19.32
			Benzene (2nd internal standard)	0.986	0.986	0.9785	0.9785	4.31	4.31
			Ethylbenzene (3rd internal standard)	6.278	6.278	6.2400	6.240	1.82	1.82
2			Acetone (1st internal standard)						
			Benzene (2nd internal standard)						
			Ethylbenzene (3rd internal standard)						
3			Acetone (1st internal standard)						
			Benzene (2nd internal standard)						
			Ethylbenzene (3rd internal standard)						
4			Acetone (1st internal standard)						
			Benzene (2nd internal standard)						
			Ethylbenzene (3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

METHOD: GC/MS VOA (EPA TO-15)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$$

Where: ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

A_x = Area of compound,

C_x = Concentration of compound,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF (CC)	RRF (CC)	%D	%D
1	R153824	8/7/17	Acetone (1st internal standard)	0.8850	1.033	1.033	16.7	16.8
			Benzene (2nd internal standard)	0.9785	1.004	1.004	2.6	2.6
			Ethylbenzene (3rd internal standard)	6.2400	5.376	5.376	13.8	13.8
2			Acetone (1st internal standard)					
			Benzene (2nd internal standard)					
			Ethylbenzene (3rd internal standard)					
3			Acetone (1st internal standard)					
			Benzene (2nd internal standard)					
			Ethylbenzene (3rd internal standard)					
4			Acetone (1st internal standard)					
			Benzene (2nd internal standard)					
			Ethylbenzene (3rd internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

METHOD: GC/MS VOA (EPA Method TO-15)

NY N N/A

Were all reported results recalculated and verified for all level IV samples?

Y	N	N/A
---	---	-----

Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_s)(I_s)(DF)}{(A_k)(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added, in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, F

$$\begin{aligned} \text{Conc.} &= \frac{(878111)(10.00)}{(16356)(0.8850)} \times \frac{58}{24.47} \\ &= 143.8 \mu\text{g/ml} \end{aligned}$$

[illegible]

Former Computer Circuits Site, NYSDEC

Site: Former Computer Circuits Site
Laboratory: Alpha Analytical, Inc.
Report No.: L1746905
Reviewer: Pei Geng and Christina Rink/Laboratory Data Consultants for P.W.
Grosser Consulting
Date: February 28, 2018

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
SVE-SOUTH	L1746905-01	VOA
SVE-NORTH	L1746905-02	VOA
IA-4	L1746905-03	VOA
IA-2	L1746905-04	VOA
IA-8	L1746905-05	VOA
IA-3	L1746905-06	VOA
IA-5	L1746905-07	VOA
IA-8DUP	L1746905-05DUP	VOA

Associated QC Samples(s):

Field/Trip Blanks: None Associated

Field Duplicate pair: None Associated

The above-listed air samples were collected on December 19, 2017 and were analyzed for volatile organic compounds (VOCs) by method TO-15 and method TO-15 in selected ion monitoring (SIM) mode. The data validation was performed in accordance with the USEPA Region 2 *Analysis of Volatile Organic Compounds in Air Contained Canisters*, SOP HW-31, Revision 6 (June 2014) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to sample matrix and laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Former Computer Circuits Site, NYSDEC

Continuing Calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Instrument ID	Compound	CC %D	Associated Samples		Validation Action
12/27/17	R156356	1,2,4-Trichlorobenzene	30.1	SVE-SOUTH SVE-NORTH IA-4 IA-2 IA-8 IA-3 IA-5	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 30; estimate (J/UJ) positive and nondetect results.

XX = Continuing calibration (CC) percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.

SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.

+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The results for the samples listed above were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not required.

Laboratory Duplicate Results

Laboratory duplicate analyses were performed on sample IA-8 for VOC analyses. The following table lists the compounds recovered outside of control limits in the laboratory duplicate analyses and the resulting actions.

Compound	RPD (Limits)	Affected Sample	Validation Action
Dichlorodifluoromethane	36 (≤ 25)	IA-8	J detect

The dichlorodifluoromethane result for the sample listed above was estimated due to laboratory duplicate relative percent difference exceedance. The bias cannot be determined. The result can be used for project objectives as detects with estimated an estimated value (J) which may have a minor impact on the data usability.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Quantitation Limits and Data Assessment

No results were reported below the reporting limit (RL) and above the minimum detection limit (MDL) in the VOC analyses.

Dilutions were not required for VOC analyses.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.
- JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-01
Client ID : SVE-SOUTH
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : SOIL_VAPOR
Analytical Method : 48,TO-15
Lab File ID : R156376
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 10:35
Date Received : 12/20/17
Date Analyzed : 12/28/17 01:42
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.401	0.200	--	1.98	0.989	--	
74-87-3	Chloromethane	0.506	0.200	--	1.04	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
75-01-4	Vinyl chloride	ND	0.200	--	ND	0.511	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	9.37	5.00	--	17.7	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	4.57	1.00	--	10.9	2.38	--	
75-69-4	Trichlorofluoromethane	0.289	0.200	--	1.62	1.12	--	
67-63-0	Isopropanol	1.77	0.500	--	4.35	1.23	--	
75-35-4	1,1-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-65-0	Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--	U
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U

FEB 28 2018



Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-01
Client ID : SVE-SOUTH
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : SOIL_VAPOR
Analytical Method : 48,TO-15
Lab File ID : R156376
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 10:35
Date Received : 12/20/17
Date Analyzed : 12/28/17 01:42
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
71-55-6	1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--	U U
71-43-2	Benzene	0.255	0.200	--	0.815	0.639	--	
56-23-5	Carbon tetrachloride	ND	0.200	--	ND	1.26	--	U U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
79-01-6	Trichloroethene	0.753	0.200	--	4.05	1.07	--	
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.390	0.200	--	1.47	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
127-18-4	Tetrachloroethene	ND	0.200	--	ND	1.36	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U

FEB 28 2018



Initials: CR

Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-01
Client ID : SVE-SOUTH
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : SOIL_VAPOR
Analytical Method : 48,TO-15
Lab File ID : R156376
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 10:35
Date Received : 12/20/17
Date Analyzed : 12/28/17 01:42
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-02
Client ID : SVE-NORTH
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : SOIL_VAPOR
Analytical Method : 48,TO-15
Lab File ID : R156377
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 10:15
Date Received : 12/20/17
Date Analyzed : 12/28/17 02:14
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.590	0.200	--	2.92	0.989	--	
74-87-3	Chloromethane	0.265	0.200	--	0.547	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
75-01-4	Vinyl chloride	ND	0.200	--	ND	0.511	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	ND	5.00	--	ND	9.42	--	U
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	6.32	1.00	--	15.0	2.38	--	
75-69-4	Trichlorofluoromethane	0.424	0.200	--	2.38	1.12	--	
67-63-0	Isopropanol	4.65	0.500	--	11.4	1.23	--	
75-35-4	1,1-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-65-0	Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--	U
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	0.719	0.200	--	5.51	1.53	--	
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
156-59-2	cis-1,2-Dichloroethene	0.213	0.200	--	0.845	0.793	--	
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U

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Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : COMPUTER CIRCUITS
 Lab ID : L1746905-02
 Client ID : SVE-NORTH
 Sample Location : 145 MARCUS BLVD, HAUPPAUG
 Sample Matrix : SOIL_VAPOR
 Analytical Method : 48,TO-15
 Lab File ID : R156377
 Sample Amount : 250 ml

Lab Number : L1746905
 Project Number : MAR1701
 Date Collected : 12/19/17 10:15
 Date Received : 12/20/17
 Date Analyzed : 12/28/17 02:14
 Dilution Factor : 1
 Analyst : RY
 Instrument ID : AIRPIANO1
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
71-55-6	1,1,1-Trichloroethane	0.676	0.200	--	3.69	1.09	--	
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
56-23-5	Carbon tetrachloride	ND	0.200	--	ND	1.26	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
79-01-6	Trichloroethene	8.98	0.200	--	48.3	1.07	--	
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	ND	0.200	--	ND	0.754	--	U
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
127-18-4	Tetrachloroethene	6.28	0.200	--	42.6	1.36	--	
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-02
Client ID : SVE-NORTH
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : SOIL_VAPOR
Analytical Method : 48.TO-15
Lab File ID : R156377
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 10:15
Date Received : 12/20/17
Date Analyzed : 12/28/17 02:14
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : COMPUTER CIRCUITS
 Lab ID : L1746905-03
 Client ID : IA-4
 Sample Location : 145 MARCUS BLVD, HAUPPAUG
 Sample Matrix : AIR
 Analytical Method : 48,TO-15
 Lab File ID : R156370
 Sample Amount : 250 ml

Lab Number : L1746905
 Project Number : MAR1701
 Date Collected : 12/19/17 16:10
 Date Received : 12/20/17
 Date Analyzed : 12/27/17 22:26
 Dilution Factor : 1
 Analyst : RY
 Instrument ID : AIRPIANO1
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.398	0.200	--	1.97	0.989	--	
74-87-3	Chloromethane	0.575	0.200	--	1.19	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	33.5	5.00	--	63.1	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	9.72	1.00	--	23.1	2.38	--	
75-69-4	Trichlorofluoromethane	0.390	0.200	--	2.19	1.12	--	
67-63-0	Isopropanol	54.4	0.500	--	134	1.23	--	
75-65-0	Tertiary butyl Alcohol	0.566	0.500	--	1.72	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-43-2	Benzene	0.309	0.200	--	0.987	0.639	--	
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

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Initials: *CR*

Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-03
Client ID : IA-4
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R156370
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:10
Date Received : 12/20/17
Date Analyzed : 12/27/17 22:26
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	0.335	0.200	--	1.37	0.820	--	
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.546	0.200	--	2.06	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-04
Client ID : IA-2
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R156371
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:16
Date Received : 12/20/17
Date Analyzed : 12/27/17 22:59
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.347	0.200	--	1.72	0.989	--	
74-87-3	Chloromethane	0.619	0.200	--	1.28	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	139	5.00	--	262	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	13.2	1.00	--	31.4	2.38	--	
75-69-4	Trichlorofluoromethane	0.577	0.200	--	3.24	1.12	--	
67-63-0	Isopropanol	96.7	0.500	--	238	1.23	--	
75-65-0	Tertiary butyl Alcohol	0.707	0.500	--	2.14	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	0.515	0.500	--	1.52	1.47	--	
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-43-2	Benzene	0.304	0.200	--	0.971	0.639	--	
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-04
Client ID : IA-2
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R156371
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:16
Date Received : 12/20/17
Date Analyzed : 12/27/17 22:59
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	0.333	0.200	--	1.36	0.820	--	
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.463	0.200	--	1.74	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-05
Client ID : IA-8
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R156372
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:18
Date Received : 12/20/17
Date Analyzed : 12/27/17 23:31
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.356	0.200	--	1.76	0.989	--	J
74-87-3	Chloromethane	0.667	0.200	--	1.38	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U ↓
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U ↓
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U ↓
64-17-5	Ethanol	256	5.00	--	482	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U U
67-64-1	Acetone	11.7	1.00	--	27.8	2.38	--	
75-69-4	Trichlorofluoromethane	0.303	0.200	--	1.70	1.12	--	
67-63-0	Isopropanol	10.9	0.500	--	26.8	1.23	--	
75-65-0	Tertiary butyl Alcohol	0.538	0.500	--	1.63	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U ↓
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U ↓
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U ↓
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U ↓
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U ↓
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U ↓
78-93-3	2-Butanone	0.529	0.500	--	1.56	1.47	--	
141-78-6	Ethyl Acetate	0.801	0.500	--	2.89	1.80	--	
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U ↓
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U ↓
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U ↓
71-43-2	Benzene	0.294	0.200	--	0.939	0.639	--	
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-05
Client ID : IA-8
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R156372
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:18
Date Received : 12/20/17
Date Analyzed : 12/27/17 23:31
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.456	0.200	--	1.72	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Initials: *CE*

Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-06
Client ID : IA-3
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R156374
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:19
Date Received : 12/20/17
Date Analyzed : 12/28/17 00:36
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.328	0.200	--	1.62	0.989	--	
74-87-3	Chloromethane	0.666	0.200	--	1.38	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	254	5.00	--	479	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	11.9	1.00	--	28.3	2.38	--	
75-69-4	Trichlorofluoromethane	0.272	0.200	--	1.53	1.12	--	
67-63-0	Isopropanol	10.6	0.500	--	26.1	1.23	--	
75-65-0	Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--	U
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	0.585	0.500	--	1.73	1.47	--	
141-78-6	Ethyl Acetate	0.737	0.500	--	2.66	1.80	--	
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-43-2	Benzene	0.284	0.200	--	0.907	0.639	--	
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-06
Client ID : IA-3
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R156374
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:19
Date Received : 12/20/17
Date Analyzed : 12/28/17 00:36
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	0.203	0.200	--	0.832	0.820	--	
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.637	0.200	--	2.40	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Initials: *RY*

Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-07
Client ID : IA-5
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R156375
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:22
Date Received : 12/20/17
Date Analyzed : 12/28/17 01:09
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-71-8	Dichlorodifluoromethane	0.584	0.200	--	2.89	0.989	--	
74-87-3	Chloromethane	0.800	0.200	--	1.65	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	140	5.00	--	264	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	9.75	1.00	--	23.2	2.38	--	
75-69-4	Trichlorofluoromethane	0.265	0.200	--	1.49	1.12	--	
67-63-0	Isopropanol	11.1	0.500	--	27.3	1.23	--	
75-65-0	Tertiary butyl Alcohol	0.514	0.500	--	1.56	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	0.603	0.500	--	1.78	1.47	--	
141-78-6	Ethyl Acetate	0.572	0.500	--	2.06	1.80	--	
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	0.234	0.200	--	0.825	0.705	--	
71-43-2	Benzene	0.314	0.200	--	1.00	0.639	--	
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

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Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-07
Client ID : IA-5
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R156375
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:22
Date Received : 12/20/17
Date Analyzed : 12/28/17 01:09
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	0.213	0.200	--	0.995	0.934	--	
142-82-5	Heptane	0.255	0.200	--	1.05	0.820	--	
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.516	0.200	--	1.94	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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Initials: CR



Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-03
Client ID : IA-4
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15-SIM
Lab File ID : R156370
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:10
Date Received : 12/20/17
Date Analyzed : 12/27/17 22:26
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
56-23-5	Carbon tetrachloride	0.091	0.020	--	0.572	0.126	--	
79-01-6	Trichloroethene	0.059	0.020	--	0.317	0.107	--	
127-18-4	Tetrachloroethene	0.061	0.020	--	0.414	0.136	--	

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Initials: *CR*



Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-04
Client ID : IA-2
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15-SIM
Lab File ID : R156371
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:16
Date Received : 12/20/17
Date Analyzed : 12/27/17 22:59
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U ↓
71-55-6	1,1,1-Trichloroethane	0.020	0.020	--	0.109	0.109	--	
56-23-5	Carbon tetrachloride	0.086	0.020	--	0.541	0.126	--	
79-01-6	Trichloroethene	0.065	0.020	--	0.349	0.107	--	
127-18-4	Tetrachloroethene	0.077	0.020	--	0.522	0.136	--	

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Initials: *ER*



Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : COMPUTER CIRCUITS
 Lab ID : L1746905-05
 Client ID : IA-8
 Sample Location : 145 MARCUS BLVD, HAUPPAUG
 Sample Matrix : AIR
 Analytical Method : 48,TO-15-SIM
 Lab File ID : R156372
 Sample Amount : 250 ml

Lab Number : L1746905
 Project Number : MAR1701
 Date Collected : 12/19/17 16:18
 Date Received : 12/20/17
 Date Analyzed : 12/27/17 23:31
 Dilution Factor : 1
 Analyst : RY
 Instrument ID : AIRPIANO1
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
56-23-5	Carbon tetrachloride	0.092	0.020	--	0.579	0.126	--	
79-01-6	Trichloroethene	0.148	0.020	--	0.795	0.107	--	
127-18-4	Tetrachloroethene	0.084	0.020	--	0.570	0.136	--	

FEB 28 2018

Initials: *ER*



Form 1

Volatile Organics

Client : P. W. Grosser
 Project Name : COMPUTER CIRCUITS
 Lab ID : L1746905-06
 Client ID : IA-3
 Sample Location : 145 MARCUS BLVD, HAUPPAUG
 Sample Matrix : AIR
 Analytical Method : 48,TO-15-SIM
 Lab File ID : R156374
 Sample Amount : 250 ml

Lab Number : L1746905
 Project Number : MAR1701
 Date Collected : 12/19/17 16:19
 Date Received : 12/20/17
 Date Analyzed : 12/28/17 00:36
 Dilution Factor : 1
 Analyst : RY
 Instrument ID : AIRPIANO1
 GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
56-23-5	Carbon tetrachloride	0.090	0.020	--	0.566	0.126	--	
79-01-6	Trichloroethene	0.142	0.020	--	0.763	0.107	--	
127-18-4	Tetrachloroethene	0.086	0.020	--	0.583	0.136	--	

FEB 28 2018

Initials: CR



Form 1 Volatile Organics

Client : P. W. Grosser
Project Name : COMPUTER CIRCUITS
Lab ID : L1746905-07
Client ID : IA-5
Sample Location : 145 MARCUS BLVD, HAUPPAUG
Sample Matrix : AIR
Analytical Method : 48,TO-15-SIM
Lab File ID : R156375
Sample Amount : 250 ml

Lab Number : L1746905
Project Number : MAR1701
Date Collected : 12/19/17 16:22
Date Received : 12/20/17
Date Analyzed : 12/28/17 01:09
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRPIANO1
GC Column : RTX-1

CAS NO.	Parameter	ppbV			ug/m3			Qualifier
		Results	RL	MDL	Results	RL	MDL	
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
56-23-5	Carbon tetrachloride	0.090	0.020	--	0.566	0.126	--	
79-01-6	Trichloroethene	0.077	0.020	--	0.414	0.107	--	
127-18-4	Tetrachloroethene	0.094	0.020	--	0.637	0.136	--	

FEB 28 2018

Initials: *CR*



METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSO ≤ 30%. 1CV ≤ 30%
IV.	Continuing calibration	SW	2CV ≤ 30%
V.	Laboratory Blanks/Canister Blanks	A/A	bx-batch
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates / DUP	N/SW	
IX.	Laboratory control samples	A	LC
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	SVE-SOUTH	L1746905-01	Air	12/19/17
2	SVE-NORTH	L1746905-02	Air	12/19/17
3	IA-4	L1746905-03	Air	12/19/17
4	IA-2	L1746905-04	Air	12/19/17
5	IA-8	L1746905-05	Air	12/19/17
6	IA-3	L1746905-06	Air	12/19/17
7	IA-5	L1746905-07	Air	12/19/17
8	IA-8DUP	L1746905-05DUP	Air	12/19/17
9				
10				

Notes:

W#107046-4					

Method: Volatiles (EPA Method TO-15)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	/			
Was canister pressure criteria met?	/			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 24 hour clock criteria?	/			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) < 30%?	/			
IIIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after every ICAL for each instrument?	/			
Were all percent differences (%D) < 30% or percent recoveries (%R) 70-130%?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 24 hours for each instrument?	/			
Were all percent differences (%D) < 30% or percent recoveries (%R) 70-130%?		/		
V. Laboratory Blanks/Canister Blanks				
Was a laboratory blank associated with every sample in this SDG?	/			
Was a laboratory blank analyzed at least once every 24 hours for each matrix and concentration?	/			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.		/		
Was a canister blank analyzed for every canister?	/			
Was there contamination in the canister blanks? If yes, please see the Canister Blanks validation completeness worksheet.		/		
VI. Field Blanks				
Were field blanks identified in this SDG?		/		
Were target compounds detected in the field blanks?			/	
VII. Surrogate spikes (Optional)				
Were all surrogate percent recoveries (%R) within QC limits?		/		
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			/	
VIII. Laboratory Duplicate				
Was a laboratory duplicate analyzed for this SDG?	/			
Were the relative percent differences (RPD) within the QC limits?		/		

LDC #: 40330C48

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: [Signature]
2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per analytical batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
XI. Internal standards				
Were internal standard area counts within $\pm 40\%$ from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within ± 20.0 seconds from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method TO-15)

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

METHOD: GC/MS VOA (EPA Method TO-15)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 24 hours for each instrument?

Y N N/A Were all percent differences (%D) $\leq 30\%$?

[illegible]

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

METHOD : GC/MS VOA (EPA Method TO-15)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?

Y N ~~N/A~~ Were a MS/MSD analyzed for every 20 samples?

Y N (N/A) Were a MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

[illegible]

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of compound,

C_x = Concentration of compound,

S = Standard deviation of the RRFs

X = Mean of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (10 std)	RRF (10 std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	ICAL	10/26/17	Acetone (1st internal standard)	0.642	0.642	0.7060	0.7060	24.52	24.53
			Benzene (2nd internal standard)	1.045	1.045	1.0357	1.0357	9.03	9.03
			Ethylbenzene (3rd internal standard)	7.428	7.428	7.1751	7.1751	9.44	9.44
2			Acetone (1st internal standard)						
			Benzene (2nd internal standard)						
			Ethylbenzene (3rd internal standard)						
3			Acetone (1st internal standard)						
			Benzene (2nd internal standard)						
			Ethylbenzene (3rd internal standard)						
4			Acetone (1st internal standard)						
			Benzene (2nd internal standard)						
			Ethylbenzene (3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS VOA (EPA TO-15)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$$

Where: ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

A_x = Area of compound,

C_x = Concentration of compound,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF (CC)	RRF (CC)	%D	%D
1	R156356	12/27/17	Acetone (1st internal standard)	0.7060	0.756	0.756	7.1	7.0
			Benzene (2nd internal standard)	1.0357	0.957	0.957	7.6	7.6
			Ethylbenzene (3rd internal standard)	7.1751	7.121	7.121	0.8	0.8
2			Acetone (1st internal standard)					
			Benzene (2nd internal standard)					
			Ethylbenzene (3rd internal standard)					
3			Acetone (1st internal standard)					
			Benzene (2nd internal standard)					
			Ethylbenzene (3rd internal standard)					
4			Acetone (1st internal standard)					
			Benzene (2nd internal standard)					
			Ethylbenzene (3rd internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

METHOD: GC/MS VOA (EPA Method TO-15)

Y	N	N/A
Y	N	N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_v)(I_s)(DF)}{(A_k)(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added, in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 3, F

$$\begin{aligned} \text{Conc.} &= \frac{(84700)(10.00)(1)}{(122426)(0.7060)(\quad)(\quad)} \\ &= 9.72 \text{ ppbV} \times \frac{58}{24.47} \\ &= 23.2 \mu\text{g/m}^3 \end{aligned}$$

[illegible]

LDC #: 40330C48b

VALIDATION COMPLETENESS WORKSHEET

SDG #: L1746905

Category B

Laboratory: Alpha Analytical, Inc.

Date: 2/9/18

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA Method TO-15-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSO $\leq 30\%$ ICV $\leq 30\%$
IV.	Continuing calibration	A	CCV $\leq 30\%$
V.	Laboratory Blanks/Canister Blanks	A/A	by batch
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates /DUP	N/A	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	SVE-NORTH	L1746905-02	Air	12/19/17
2	IA-4	L1746905-03	Air	12/19/17
3	IA-2	L1746905-04	Air	12/19/17
4	IA-8	L1746905-05	Air	12/19/17
5	IA-3	L1746905-06	Air	12/19/17
6	IA-5	L1746905-07	Air	12/19/17
7	IA-8DUP	L1746905-05DUP	Air	12/19/17
8				
9				
10				

Notes:

LDC #: 40330cd86

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: 9
2nd Reviewer: **Method:** Volatiles (EPA Method TO-15)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was canister pressure criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 24 hour clock criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after every ICAL for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 30% or percent recoveries (%R) 70-130%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 24 hours for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 30% or percent recoveries (%R) 70-130%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory Blanks/Canister Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed at least once every 24 hours for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Was a canister blank analyzed for every canister?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the canister blanks? If yes, please see the Canister Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Field Blanks				
Were field blanks identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Surrogate spikes (Optional)				
Were all surrogate percent recoveries (%R) within QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VIII. Laboratory Duplicate				
Was a laboratory duplicate analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the relative percent differences (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

LDC #: 10320486

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: [Signature]
2nd Reviewer: [Signature]

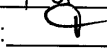
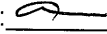
Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per analytical batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
XI. Internal standards				
Were internal standard area counts within $\pm 40\%$ from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within ± 20.0 seconds from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method TO-15)

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

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 Reviewer: 
 2nd Reviewer: 

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of compound,

C_x = Concentration of compound,

S = Standard deviation of the RRFs

X = Mean of the RRFs

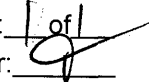

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (1.0 std)	RRF (1.0 std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	ICAL	10/26/17	Vinyl chloride (1st internal standard)	0.569	0.569	0.5773	0.5773	7.91	7.91
			Trichloroethene (2nd internal standard)	0.422	0.422	0.4187	0.4187	7.21	7.20
			Tetrachloroethene (3rd internal standard)	2.515	2.515	2.4377	2.4377	5.43	5.42
2			Vinyl chloride (1st internal standard)						
			Benzene (2nd internal standard)						
			Tetrachloroethene (3rd internal standard)						
3			Vinyl chloride (1st internal standard)						
			Benzene (2nd internal standard)						
			Tetrachloroethene (3rd internal standard)						
4			Vinyl chloride (1st internal standard)						
			Benzene (2nd internal standard)						
			Tetrachloroethene (3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1
 Reviewer: 
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METHOD: GC/MS VOA (EPA TO-15)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$$

Where: ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

 A_x = Area of compound, A_{is} = Area of associated internal standard C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF (CC)	RRF (CC)	%D	%D
1	R156357	12/27/17	Vinyl chloride (1st internal standard)	0.5773	0.579	0.579	0.3	0.3
			Benzene (2nd internal standard)	0.4187	0.416	0.416	0.7	0.6
			Tetrachloroethene (3rd internal standard)	2.4377	2.669	2.669	9.5	9.5
2			Vinyl chloride (1st internal standard)					
			Benzene (2nd internal standard)					
			Tetrachloroethene (3rd internal standard)					
3			Vinyl chloride (1st internal standard)					
			Benzene (2nd internal standard)					
			Tetrachloroethene (3rd internal standard)					
4			Vinyl chloride (1st internal standard)					
			Benzene (2nd internal standard)					
			Tetrachloroethene (3rd internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET

Sample Calculation Verification

METHOD: GC/MS VOA (EPA Method TO-15)

NY N N/A

Were all reported results recalculated and verified for all level IV samples?

Y	N	N/A
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Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_k)(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added, in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 4, 7

$$\begin{aligned} \text{Conc.} &= \frac{(550)(10.0)(1)}{(22554)(0.4187)} \\ &= 0.59 \text{ ppbv} \times \frac{131}{24.46-24.47} \\ &= 0.31 \text{ ms/m} \end{aligned}$$

[illegible]